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JAPAN AS A MARKET FOR FISHERY PRODUCTS
The Medium-term Outlook to 1985

prepared by

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CONTENTS

		Page
I.	INTRODUCTION	1
II.	SUMMARY	3
III.	JAPAN AS A MARKET FOR FISHERY PRODUCTS	5
	A. The Present State of Japanese Fisheries	5
	B. The Import of Fish into Japan	6
	C. Future Prospects	8
IV.	MARKET PROSPECTS FOR SELECTED FISHERY COMMODITIES	11
	A. Shrimp	11
	B. Squid and Cuttlefish	14
	C. Dried Skipjack Tuna ("Katsuobushi")	20
	D. Herring Roe ("Kazunoko")	23
	E. Eels and Eel Elvers	25
	F. Agar ("Kanten")	27
APPENDIX I	JAPAN'S IMPORT QUOTA SYSTEM	29
APPENDIX II	COASTAL FISHING GROUNDS RENOVATION AND DEVELOPMENT PROGRAMME OF JAPAN	31
APPENDIX III	SHRIMP IMPORT FORMALITIES AND TARIFF	33
APPENDIX IV	THE IMPORT QUOTA SYSTEM FOR SQUID IN JAPAN	37
APPENDIX V	FEATURES OF SKIPJACK TUNA AND ITS RELATED SPECIES OF THE MACKEREL FAMILY (SCOMBRIDAE)	39
APPENDIX VI	GRADING OF HERRING ROE	41
APPENDIX VII	IMPORT REQUIREMENTS AND TARIFF OF EELS, EEL ELVERS AND PROCESSED EELS	45
APPENDIX VIII	LIST OF IMPORTERS	47
STATISTICAL ANNEX		
Table I	Japan - Production of Selected Fishery Products (lobster, shrimp, squid, cuttlefish, eel, agar)	53
Table II	Sources of Japanese Fresh or Frozen Shrimp Imports	54
Table III	Household Annual Expenditure for Shrimp, Lobsters and Crabs Quantity Purchased and Average Price per year	55

		Page
Table IV	Relationship between Supply and Price Indices 1970-77	56
Table V	Import Prices c.i.f. of Shrimp by Origins (U.S.$ per kg)	57
Table VI	Japan - Import of Fresh and Frozen Squid, including Cuttlefish (by country of origin)	58
Table VII	Production of Processed Squid	59
Table VIII	Household Annual Expenditure for Squid (Fresh and Processed) Quantity Purchased and Average Price by Year	60
Table IX	Import Unit Values c.i.f. for Squid (including cuttlefish) of Major Origin (U.S.$ per kg)	61
Table X	Production of Katsuobushi and similar products (product weight)	62
Table XI	Household annual expenditure, quantity purchased and average price by year	63
Table XII	Imports and Exports of Dried Skipjack Tuna (Katsuobushi) and the like by Country of Origin and Destination	64
Table XIII	Imports of Herring roe by Country of Origin	65
Table XIV	Imports of Live Eel by Quantity, Value and Country of Origin	66
Table XV	Imports of Elvers by Quantity, Value, Unit Value and Country of Origin	67
Table XVI	Imports of Agar and Algae for Agar by Country of Origin	68

Key to standard symbols in tables:

-	nil
...	data not available
0.0 or 0	negligible quantity (less than one half of the unit indicated)

I. INTRODUCTION

The major objectives of this study are to assess the short- and medium-term import market outlook for selected fish and fishery products in Japan, and to examine the Japanese importing and distribution system for fish products with a view to suggesting effective marketing strategies for exporting countries from all over the world. The study has been attempted because of Japan's significant position as an expanding importer of fish and fishery products in the world market, presently ranking first in terms of value, and second only to the United States in terms of quantity.

The paper presents, in Part III, a review of the current situation of the Japanese fisheries in the light of 200-mile limits extension, and the present state and future outlook for fish imports in the Japanese market. The paper also reviews perspectives of potential future levels of demand for fish in Japan and indicates domestic production potentials on the basis of FAO projection. In Part IV, selected fishery commodities likely to have a considerable absorptive capacity in Japan are reviewed; i.e., shrimp, squid (including cuttlefish), dried skipjack tuna ("katsuobushi"), eels and eel elvers ("shirasu"), herring roe ("kazunoko") and agar ("kanten").

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II. SUMMARY

(a) The Japanese fishery industry has an important social role in food supply and helps to maintain the economic viability of coastal communities. The extension of national jurisdiction - commonly to 200 miles - by coastal states has had a significant impact on Japanese fisheries. For example, the production from distant waters fell to 2.3 million tons in 1978, a decrease of over 40 percent from the level in 1973. Demand for fishery products in Japan has stabilized in recent years. High levels of fish prices and a gradual change in dietary habits associated with increasing affluence are the major reasons.

(b) There has been a marked increase in the import of fishery products over the last decade. The most rapidly growing commodity group is the crustaceans and cephalopods which accounted in 1978 for over 45 percent of the value of all fishery imports. Fresh, chilled and frozen fish is the second most important commodity group. Of the other commodity groups, only cured products represent a significant proportion of the total import: there has been a notable increase in fish roe, whilst imports of live fish have been stagnant. The increasing consumption of high-grade items, such as shrimp, cuttlefish, abalone, eel and fish roe, has been one of the main characteristics in the last decade.

(c) A gradual expansion in total Japanese demand for fish and fish products seems likely to reach some 15 million tons in 1985, an increase of nearly 35 percent above the 1972-74 level. In *per caput* terms, the increase is expected to be 12 percent from 75 kg on a live weight basis in 1972-74 to 84 kg in 1985. The projections of total demand in 1985 can be broken down as follows: 9.6 million tons for food fish and shellfish, 4.4 million tons for fish, shellfish and aquatic animals and plants for feed, and 660 000 tons for seaweed. Projections, on a normative basis, indicate the possibility of a total fish output of only 9.4 million tons in 1985; there could thus be a serious deficit between the Japanese production of fish and projected requirements.

(d) The consumption of shrimp in Japan increased by over 70 percent during the last 7-8 years. As the total domestic catch of shrimp was not able to keep pace with the rise in consumption, the level of imports also increased rapidly. By country, Indonesia and India have been by far the most important suppliers. China, Thailand, Mexico, Australia, Pakistan, Taiwan, Hong Kong and Malaysia are also important sources of supply. With demand apparently strong in the light of rising living standards, the shortage of supply will almost assuredly cause higher prices; but the demand is expected to continue to increase.

(e) Japan is the world's largest squid/cuttlefish producing and consuming nation in the world. Although domestic supplies of squid/cuttlefish have traditionally been sufficient for home consumption, imports have gained great importance in the last decade. The main suppliers to the Japanese market have been the Republic of Korea, Thailand, People's Democratic Republic of Yemen and Spain. Among the species imported, *Sepia officinalis* is by far the most important. The pattern of utilization of squid in Japan is varied. Apart from raw consumption, squid preparations generally called "chinmi" have considerably increased. Increased consumption has been also prominent in smoked and salted fermented products. On the other hand, canned squid and dried squid "surume" have somewhat declined in importance. Import market prospects for squid and cuttlefish will remain good: the former is mainly for processing and the latter for "sashimi" or raw consumption.

(f) Katsuobushi (dried skipjack tuna) is a specific form of a seasoning product used in making soup and broth. In recent years Japanese interest in katsuobushi has grown considerably, as it is regarded as a natural food seasoning and having less harmful after-effects than synthetic chemical food seasoning.

There has been a marked increase in katsuobushi consumption in Japan during 1970-77. The steady growth in the consumption has been made possible by an expansion of the scale and year-round operation of the skipjack fisheries. Income cross-section analysis indicates that the long-run prospects for katsuobushi consumption are favourable.

(g) In pre-war days, herring roe (kazunoko) was regarded as an inexpensive popular fish product but, with the gradual decline in production, it has become one of the most expensive and preferred fishery products. Imports of herring roe have increased tremendously over the last decade. Major suppliers are China, Canada, the United States and the Republic of Korea. Kazunoko is eaten either as an hors-d'oeuvre or as an accompaniment to alcoholic drinks. The Japanese market seems likely to offer increasingly larger markets for kazunoko in the medium term, say, up to 1985.

(h) Total supply of eel has considerably increased during the last several years. Though there has been an upward trend in the national production, the Japanese market is dependent to a considerable degree on foreign suppliers such as Taiwan, Thailand, China, U.S.A. and Hong Kong. In order to keep pace with the growing demand of the domestic market, Japan has had for some years to import substantial quantities of elvers, as well. The major suppliers are Taiwan, the Republic of Korea, France and China. The prospects for future growth in consumption with rising income levels are good.

(i) Japan is the largest producer of agar (kanten) in the world. The commodity is marketed in various forms - powder, flakes, shreds, sticks or bricks. To compensate for the falling level of domestic production, Japanese imports, both of finished kanten and of the seaweed raw material, rose substantially in the early 1970s. In more recent years, Japanese imports of those commodities have somewhat declined. The major suppliers of kanten to Japan are the Republic of Korea, Portugal and Argentina. Other sources of supply of dried seaweed for agar extraction are Chile, Egypt, Mexico and the Malagasy Republic, Brazil, China and the Philippines. The influence of population trends and continued expansion of demand for food and confectionary products of many kinds will be positive factors in maintaining and promoting Japanese demand for kanten.

III. JAPAN AS A MARKET FOR FISHERY PRODUCTS

A. The Present State of Japanese Fisheries

The aquatic environment of the Japanese coasts, the current systems and associated upwellings, as well as the indented nature of the coastline, is highly favourable to fish production. The resources found in these near waters have been harvested for centuries and as they have become heavily exploited and less rewarding commercially, the radius of operations has gradually extended until Japanese fleets are now harvesting catches from all of the world's oceans. Catches now average annually some 10 million tons, and Japan remains among the three largest fish producers in the world.

Because of the highly-developed nature of the Japanese economy, the role of the fishing industry, which contributes (1977) a little over 1.0 percent to Gross Domestic Product and employs marginally less than 1.0 percent of the labour force, appears relatively unimportant. The impact of fisheries on the economy should not, however, be assessed on these factors alone. The fishery industry in some more isolated areas still has an important social role and helps to maintain the economic viability of coastal communities. Above all, however, fisheries plays a highly significant role in food supply.

The declaration of exclusive economic zones (EEZ) by many coastal countries has a significant impact on Japanese fisheries, particularly those which have been carried out in the waters of the U.S.S.R., U.S.A. and Canada. Because of the reduced access, some Japanese vessels have had to withdraw from the zones of these countries. Old vessels have been scrapped after the owners had received compensation from the government, and others refitted and deployed to other areas.

Japan's marine fishery production is classified broadly into three categories - coastal, offshore and distant waters - based on the licensing of fishing vessels by the national or the prefectural government. Annual production from these three categories in 1978 totalled 9.8 million tons, with the balance coming from aquaculture in shallow seas (917 000 tons) and freshwater fisheries (179 000 tons), but of the total production, some 3.5 million tons were caught in the 200-mile zones of foreign countries. The effect of the establishment of EEZ has been most distinctly observed in the decrease of the catch of Alaska pollack whose production dropped to 1.5 million tons in 1978 as compared with 2.5 million tons in 1976.

Although the year 1978 registered a record catch, the production from distant waters fell to 2.3 million tons, a decrease of over 40 percent from the level in 1973. The deficit was covered by increased catch of sardine and mackerel in offshore and coastal waters.

With rich fishery resources close at hand, and with much of the land area of low agricultural value, it is hardly surprising that fish consumption in Japan provides around one fifth of the total protein supplies and around one half of the supplies of animal protein. *Per caput* consumption of fish has risen steadily since the end of the second world war, reaching 27.0 kg[1/] in 1955, 30.0 kg[2/] in 1965 and being currently over 35.0 kg[3/] *per caput* in product weight basis.

It should, however, be noted that demand for fishery products in Japan has stabilized in recent years. The annual *per caput* intake of animal protein derived from livestock and dairy products exceeded that of fishery products for the first time in 1976. High levels of fish prices and a gradual change in dietary habits associated with increasing affluence are the major reasons.

1/ 45.2 kg in live weight basis

2/ 52 kg in live weight basis

3/ 70 kg in live weight basis

FAO projections indicate that, given store retail prices, per caput consumption of fish in Japan will rise to 83.6 kg (in live weight terms) by 1985. To achieve this, the annual supplies of food fish would have to be increased to 10.2 million tons; if the requirements for feed are included, to some 15 million tons. The demand for seafood cannot be met from local production alone, which might fall further as territorial fishing ground restrictions come into force. The marketing of fish products in Japan will, therefore, be increasingly dependent on imports. There is little doubt that imports of fish and fishery products, particularly high-priced items, will rise steadily.

B. The Import of Fish into Japan

Over the eight-year period 1970-78, the value of Japanese fish imports rose from Yen 125 000 million to Yen 676 000 million or an average annual increase of 23.49 percent. This, of course, includes a substantial element of price increase, but even in real terms the growth has been of the order of 10 percent annually. Both the target and most rapidly growing commodity group is the crustacean and molluscs which, as can be seen from Table 1, accounted in 1978 for over 45 percent of the value of all fishery imports. Fresh and frozen shrimp are the predominant commodity within this group, although the import of cephalopod products has been increasing very rapidly from negligible values in 1970 to over Yen 75 000 million in 1978.

Fresh, chilled and frozen fish is the second most important commodity group accounting for nearly 25 percent of the value of all imported fishery products (over 35 percent by weight). Within this group the tunas predominate although salmon has recently shown increased importance. Of the other commodity groups, only cured products and live fish represent a significant proportion of the total import; there has been a notable increase in fish roe in terms of value during the period under review although quantitywise the growth appears to be rather inactive. Imports of live fish have been stagnant over the last few years.

Influences on the side of both demand and supply have been responsible for the growth in Japanese imports of fishery products. On the side of demand the most obvious factor has been the rise in living standards whose effect has influenced the total amount of fish consumed as well as the commodity composition of such a consumption. One of the main characteristics of the demand for fish in Japan over the past ten years has been the increasing consumption of high-grade items such as shrimp, cuttlefish, abalone, eel and fish roe which can be attributed directly to the rise in disposable income. The obverse of this has been the fall in consumption of certain low-grade items such as mackerel and sardines.

On the supply side, the most obvious factor is the inability of the Japanese industry to keep pace with the growing demand for high quality products. Although the radius of Japanese fishing operations has expanded steadily throughout the post-war period, this has only been partially successful in meeting the needs of the Japanese market, and certain important commodities, e.g., shrimp, have rather been the object of local fisheries by developing countries which have provided the Japanese market with a growing proportion of its supplies.

The gradual liberalization of the import of many fishery items has also had a marked effect on the quantity of fish imported. In general, the restrictions have been lifted on those products which the Japanese fishermen were unable to produce in sufficient quantities and thus the threat to Japanese fishing interests posed by liberalization has been minimized. The effect of liberalization has sometimes been dramatic, for example imports of herring roe rose by a factor of ten following the lifting of restrictions in 1972.

Japan currently has import quotas in force on a number of fisheries products. All Japanese imports of fishery products fall under two categories; those which are not subject to quotas (Automatic Approval System, abbreviated AA) and those which are subject to quotas (Import Quota System, abbreviated IQ). The IQ system is an attempt to protect primarily the coastal and offshore fishermen from the inflow of low-priced products from abroad as well as to make products available on the domestic market at reasonable prices. The liberalization of fishery products has been enforced since 1960 and presently items under quota include:

Table 1

Japan - Import of fishery products by commodity

Quantity: '000 tons
Value: '000 million Yen

	1970		1976		1977		1978	
	Q	V	Q	V	Q	V	Q	V
TOTAL	361	125	814	565	1 046	656	1 020	676
Live	4	6	20	31	20	32	17	32
Shrimp, other fish	4	3	6	4	5	4	5	5
Eels (including elvers)	0	3	14	27	15	28	12	27
Fish: fresh, chilled, frozen	118	21	330	121	455	199	364	167
Tuna, skipjack	51	9	108	46	137	68	117	46
Spanish mackerel	7	1	8	4	13	5	12	5
Salmon	5	2	4	3	19	21	50	52
Herring	7	1	6	2	31	8	7	3
Whalemeat	15	1	32	9	37	14	34	14
Others	33	7	172	57	218	83	144	47
Fish: salted, dried, smoked	14	11	28	57	30	66	38	79
Salmon roe	5	6	6	18	7	22	8	23
Herring roe	1	1	12	29	10	29	10	35
Jellyfish	4	3	6	4	6	4	6	5
Sea urchin	1	1	2	4	2	5	2	5
Others	3	0	2	2	5	6	12	11
Crustacean, molluscs, fresh, frozen cured	120	62	312	316	288	302	378	317
Shrimp	57	49	126	223	128	220	145	210
Squid, cuttlefish	15	4	69	40	75	38	118	43
Octopus	36	4	94	36	63	22	78	26
Crab	1	0	13	8	18	16	32	26
Squid preparations	9	4	9	8	3	4	3	3
Squid cured	2	1	1	1	1	2	2	3
Seaweeds	7	5	9	4	7	3	10	5
Agar	0	1	1	2	1	1	1	2
Raw materials for agar	7	1	8	2	6	2	9	2
Dried nori 1/	(475 652)	3	(10 660)	0	(26 453)	0	?	1
Fish oil	2	0	2	1	2	0	0	0
Fish meal	95	17	57	5	178	25	84	9
Pearl 2/	(1 658)	1	(8 729)	5	(8 471)	6	(12 384)	8
Semi-prepared fish	0	0	24	23	32	23	28	22
Other fishery products	1	2	32	2	34	0	101	37

1/ '000 sheets

2/ kg

Source: Japan Exports and Imports, 1970, 1976, 1977, 1978, Japan Tariff Association

herring, cod (including Alaska pollack), yellow tail, mackerel, sardines, horse mackerel, saury, scallop, cuttlefish (excluding Sepia esculenta[1/]) and squid. Certain species of fresh and prepared seaweeds are also under control. In importing the above-mentioned commodities, appropriate quota levels are determined on a case-by-case basis considering the demand and supply situation of the commodities in the domestic market. Import duties varying between 4 and 15 percent are applied to a range of fishery products imported into Japan (for detailed information see Appendix I).

C. Future Prospects

Structural aspects

While some structural adjustments have already been made to cope with the rapidly changing situation, Japan faces the need to undertake further changes, possibly of a somewhat different nature. The basic measures to stabilize the balance of supply and demand for fishery products appear to be the promotion of coastal fisheries (including the development of fish farming and the improvement of fishing grounds in coastal waters) apart from the procurement of fish from distant waters through joint venture arrangements.

As a result of the recent rapid developments in the international community toward a new regime of the sea and other significant changes in the international environment relating to fisheries, a new law was enacted in 1977 to ensure proper conservation and management of fishery resources in coastal waters.

The establishment of fish shelters and fish breeding grounds is being carried out under the Coastal Fishing Grounds Renovation and Development Programme (1976-82).[2/] Also, in order to meet the needs of increased coastal and offshore activities improvements have been made on fishing ports facilities under the Six Year Long-Term Plan (1977-82).

Although it might not prove politically easy, the necessity to carry out policies of licence redistribution has been advocated. For example, Hirasawa (1978) proposed a new concept on resource management oriented type fisheries. The concept aims at allocating an appropriate quantity of fishing effort to a given water through transference and/or withdrawal of fishing rights/licences with the payment of compensations to ensure the maximum sustainable yield.

Redistribution of fishing rights/licences will eventually require substantial funds. Hirasawa's suggestion also includes the idea of charging licence fees to licence holders so as to raise funds to be used for compensation for those who transfer or withdraw from fishing. The fees could be accumulated as development funds in the later stage after such payment of compensation is over. In this context, a variety of coordinated and strong policy measures will have to be taken, such as a strict regulation of resource conservation and pollution control, greater incentives for stabilization of fish prices, careful planning of urbanization and industrialization with total water use consideration in mind, etc.

Commodity and trade aspects

In 1978 the FAO Fisheries Department attempted to quantify the prospects for fisheries up to 1985 in the form of projections of demand and production for fish and fishery products on a global basis. The projections are not simply extrapolations of past trends but take into account also the intentions of governments' policies with respect to future fishery production.

1/ Mongo-ika in Japanese

2/ Appendix II

According to these projections, increases of demand for fish and shellfish in Japan are expected to continue in response to rising incomes although there is some likelihood of further declines in the consumption of abundant fish. Demand for fish for non-human consumption is also expected to rise due to the growth of the livestock and aquaculture industries. Consumption of aquatic animals (sea cucumbers and sea urchins) and plants is not expected to show significant increases.

In summary, the total demand for fish in 1985, based upon the assumption of 5 percent per annum growth in *per caput* GDP at constant (1975) relative prices[1/] and 1 percent per annum growth in population[2/], would reach some 15 million tons indicating an increase of nearly 35 percent above 1972-74 level. In *per caput* terms, the increase is expected to be 12 percent from 75 kg on a live weight basis in 1972-74 to 84 kg in 1985. The projection of total demand in 1985 can be broken down as follows: 9.6 million tons for food fish and shellfish, 4.4 million tons for fish, shellfish and aquatic animals or plants for feed, and 660 000 tons for seaweeds (Table 2).

Normative projections of fish production in 1985 show a slight decrease from the production in 1978, being estimated at 9.4 million tons consisting of 7.2 million tons for fish, 1.5 million tons for shellfish and 735 000 tons for seaweeds. In view of the fact that some 3.5 million tons out of the present catch of over 10 million tons are taken within other countries' EEZs, the trend of future production will be heavily dependent on negotiations with the U.S.S.R, the U.S.A., Canada and other countries.

Thus, whilst demand is likely to continue to increase rapidly, domestically produced supplies may well decline. In 1977 the self-sufficiency ratios of fish and shellfish (as a group) and feed were 98 and 87 percent respectively, while by 1985 the self-sufficiency ratio of fish products (including both food fish and feed) is likely to decrease to 65 percent. Neither would Japan be self-sufficient in seaweeds, although the gap is likely to be small. Therefore, Japan will have to depend more heavily on imports of fish and shellfish. Emphasis will, particularly, be directed to the import of high grade fish so as to supplement the insufficient supply of these products in the Japanese market. It is worth noting that in general most fish products imported by Japan, for example, salmon roe, herring roe, sea urchins, sea cucumbers, eels, etc. are characterized as being very peculiar to Japanese diets rather than as being commodities widely traded in international markets.

1/ The effect of income on *per caput* demand was estimated through the application of income elasticity coefficients and appropriate demand functions, which reflect the way in which demand changes with increases in income

2/ World Population Projections - UN Medium Variant 1976-2000

Table 2

Japan Fishery Products - Supply and Projected Demand[1/]

	Total supply (1972-4)			Projected demand (1985)			Projected production (1985)
	Food	Feed	Total	Food	Feed	Total	
	(1 000 MT - live weight equivalent)						
Fish	6 017	2 295	8 312	7 589	3 970	11 559	7 153
Shellfish[2/]	1 438	203	1 641	1 989	(300)	2 289	1 500
Other aquatic animals[3/] and plants	653	127	780	662	110	772	735
TOTAL	8 108	2 625	10 733	10 240	4 380	14 620	9 388

1/ Feed excludes marine organisms used directly for fertilizer and other miscellaneous uses

2/ Crustaceans, molluscs and cephalopods

3/ Mainly sea urchins and sea cucumbers

Source: FAO, Fisheries Department - Material developed in connexion with the FAO Agricultural Commodities Projections to 1985, made on the assumptions of continuation of current national policies affecting production, consumption and trade and constant (1975) relative prices - For further details, see "Fishery Products: Supply, Demand and Trade Projections 1985", ESC:PROJ/78/5, FAO, Rome, June 1978 and "Oilseeds, fats and oils, oilcakes and meals: Supply, Demand and Trade Projections, 1985" ESC:PROJ/78/4, FAO, Rome, June 1978

IV. MARKET PROSPECTS FOR SELECTED FISHERY COMMODITIES

Introduction

The following sections examine the characteristics of and prospective demand for, selected fishery products which have a special position in the Japanese market, with a view to identifying potential opportunities in that market for producers of these commodities in other parts of the world. The commodities reviewed are: shrimp, squid (including cuttlefish), dried skipjack tuna (katsuobushi), herring roe (kazunoko), eels and eel elvers (shirasu) and agar (kanten).

A. Shrimp

Pattern of supplies

Shrimp has enjoyed increasing popularity among Japanese people, so much so that the consumption in Japan increased by over 70 percent during the last 7-8 years, expanding from 110 000 tons in 1970 to 180 000 tons in 1977 (Table 3). Until a few years ago, shrimp was considered a luxury item but this is no longer the case since it has steadily entered the diet as a popular seafood item. As the total domestic catch of shrimp (although fluctuating considerably between 51 000 tons and 79 000 tons during the years under review) was unable to keep pace with the rise in consumption, the level of imports increased rapidly from 57 000 tons in 1970 to 125 000 in 1977 and 140 000 in 1978. In other words, the proportion of imports to total consumption jumped from 52 percent in 1970 to 70 percent in 1977.

Asia has been by far the most important supplier to Japan. In 1970 the export from Asian countries to the Japanese market accounted for 65 percent (equivalent to 36 000 tons) and in 1978 it rose to nearly 80 percent (equivalent to 115 000 tons) (see Statistical Annex Table II).

Exports from Latin America have been kept at the level of 10 000 tons annually during 1970-1978. There has been a fairly constant supply from Africa, amounting to 5 000 tons. It is noteworthy that exports from Oceania (particularly from Australia) have been in a rapid upward trend.

By country, both Indonesia and India (accounting for over 40 percent of the total volume of Japanese imports) have been the main suppliers, but as the total amount of imported shrimp increased, the number of countries supplying the Japanese market has expanded considerably, rising close to 65 countries in 1978. China, Thailand, Mexico, Austrialia, Pakistan, Taiwan, Hong Kong and Malaysia are also important sources of supply, their exports ranging from over 3 000 tons to some 10 000 tons per annum. The rest of the countries supply relatively small quantities. The growth of the shrimp industry in various parts of the world is directly related to the expansion in the import demand of the three large markets, i.e., the United States, Japan and the European Economic Community.

Consumption trends

In Japan large sized shrimps (less than 16 per pound) are mainly served fried in catering sectors, i.e., luxury hotels and good restaurants, and the medium size (15-25 per pound) are used for "tempura" in ordinary restaurants and "soba" - Japanese noodle shops. Small shrimp (26-35 per pound) are consumed partly for "tempura"[1/], whilst it is mostly used as an important ingredient for "sushi"[2/] market. The smallest shrimps (over 36 per pound) are sold by supermarkets or fishmongers for home consumption.

1/ popular dish consisting of fried seafoods and vegetables

2/ another popular dish consisting of riceballs topped with seafood

Table 3 indicates that per caput consumption of shrimp and other crustaceans in overall households in all forms in 1977 was 1.6 kg, some three times higher than the 1965-70 average of 0.5 kg. This is a much greater increase than that which has taken place for all food and fish as a whole.

Although shrimp consumption at household levels has been in a downward trend during the the last few years in the general declining trend of fish consumption, the share of shrimp consumption against the total consumption has steadily increased over the last decade, i.e., 2.7 percent in 1965, 4.8 percent in 1970 and 7.6 percent in 1977 (Statistical Annex Table III).

The consumption of shrimp, as a high-priced species, is influenced by several relevant factors such as growth in disposable income, population increase, consumer preference and relative prices of substitute foods. However, recent declines in the Japanese shrimp market are partly explained by a new type of influencing factor, consumer resistance against high levels of prices caused by traders' speculation.

If these factors continue to have the same influence as in the past decade, the demand for shrimp at the consumer level may be expected to continue to increase, approaching 2 kg per caput per year in 1985 according to the projections made by the Ministry of Agriculture, Forestry and Fisheries (see Table 3).

As domestic production which has shown no significant tendency to increase during the last few years is forecast to decrease, supplies to meet increased demand will have to be imported. It also follows logically that if imported supplies increase at about the same rate as the projected increase in demand, the average price (ex-vessel) of shrimp could be expected to remain stable, although it must be noted that speculation takes place frequently on the Japanese shrimp market, thus disturbing the market quotation to a great extent, which makes it difficult to forecast the future market trend.

Price trends

Although until 1977 consumer prices of fishery products had shown a high rate of annual increase, surpassing considerably those of overall foodstuffs as well as non-food commodities, the increasing trend has become somewhat moderate recently. The price climate of fish products is characterized by the fact that abundant fish like mackerel, horse-mackerel and saury has had a substantial upsurge, whilst high-grade fish products have shown a relatively slow pace of price increases.

Among crustaceans, the price increase of shrimp (taishoebi) is more noticeable than that of lobster and prawn (Table 4). For example, the wholesale price of shrimp at the Tokyo Central Wholesale Market continued to rise from Yen 1 200/kg in 1973 to Yen 1 990/kg in 1976 and Yen 2 100/kg in 1977, indicating a 75 percent increase during the period 1973-77. This was much higher as compared with lobster (50 percent) and prawn (64 percent).

Statistical Annex Table IV also indicates that prices are sensitive to changes in supply levels. The indices of wholesale prices and supplies are inversely related. A decline in supplies brought forth a straightforward increase of prices. It is particularly conspicuous for the cases of lobster in 1976; prawn in 1976 and 1977; other shrimps in 1977. On the other hand, increases in supply are associated with an acceleration in the decline of prices. It is notable for lobster in 1973 and 1974; prawn in 1973; shrimp in 1974.

Statistical Annex Table V shows the unit value of imported shrimp from the major suppliers. The bulk of the imports consists of whole shrimp (head on, shell on and headless shell on). It is apparent from the table that there has been a rapid increase in the unit value over the last 7-8 years. Heavy demand strained dwindling domestic supplies of shrimp and contributed to sharp increases of the c.i.f. value. Nevertheless, market setbacks have been experienced from time to time. The major cause of the market setback in 1977 is said to be due to high inventories which amounted to 35 000 to 40 000 tons as against the normal level of 20 000 tons.

Table 3

Consumption and estimated demand for shrimp (including lobster and prawn) in Japan
(in tons)

	1970	1975	1976	1977	1980	1985
Domestic production[1/]	55 637	69 337	61 022	54 504	35 000	35 000
Import[2/]	57 371	114 251	126 176	128 958	174 430	229 921
Export[2/]	3 145	2 674	2 014	1 711	3 500	3 500
Domestic consumption	109 863	180 914	185 184	181 751	205 930	261 421
Per caput consumption (g)	1 046	1 616	1 625	1 629	1 745	2 120

1/ Ministry of Agriculture, Forestry and Fisheries

2/ Ministry of Finance

Source: Access to Japan's Import Market, Japan External Trade Organization, 1978

Table 4

Average prices of shrimp at Tokyo Central Wholesale Market
Yen/Kg

	1973	1974	1975	1976	1977
Kuruma prawn, fresh (Penaeus japonicus)	3 284	3 690	4 175	4 686	5 384
Taishoebi, frozen (Penaeus orientalis)	1 199	1 074	1 370	1 989	2 114
Lobster[1/]	3 529	3 263	4 223	4 757	5 318

1/ Central wholesale market at six major cities

Source: Monthly Statistics of Agriculture, Forestry and Fisheries, April 1978
Statistics and Information Department, Ministry of Agriculture and Forestry

During the period from 1970 to 1977 the average c.i.f. value nearly trebled from U.S.$ 2.4 to U.S.$ 7.0 per kg reflecting high levels of demand in the domestic market and changes in the U.S. dollar and Japanese Yen rate.[1/] It should also be noted that the c.i.f. value varies from country to country. Australian shrimp has enjoyed the highest levels of returns per unit weight, being U.S.$ 11/kg in 1978 followed by that imported by China, Hong Kong and Mexico. Indian shrimp has been priced fairly low as compared with the others due reportedly to problems related to product handling and quality control.

The price of shrimp from China and the U.S.S.R. is established on the standard prices determined by the governments. In other countries the prices are in general subject to negotiations between importers and exporters.

Market outlook

Income cross section in Table 5 shows a strong positive correlation between income and crustacean consumption. There is the obvious indication that a substantial growth in purchase and expenditure may be expected as the household income moves from group I to II and from II to III, the three of them numerically important, which suggests that rising living standards over a wide range of the Japanese population are likely to be reflected in higher consumption of crustaceans including shrimp. The strongly rising trends in expenditure from lower to higher income groups on this latter item suggest that the prospect for this commodity are particularly good.

Distribution and marketing channels

Figure 1 shows the distributional pattern of shrimp in the domestic market. It is estimated that some 25 percent of total shrimp imports is channelled through the large central wholesale markets which as of 1976 numbered 45 in 35 cities. The remaining 75 percent is handled by specialized shrimp wholesalers, sometimes concurrently importers, who operate business outside the central wholesale markets marketing mechanism established and administered by municipal governments. However there also exists a trade relationship between central wholesale markets and specialized wholesalers as shown in the flow chart. Wholesale agents in the wholesale market sell the product not only to retailers, but also to large consumers, i.e., processors, local markets and institutional buyers.

Shrimp are imported into Japan by either trading companies or fisheries companies, many of which have attempted to secure supply sources by establishing joint ventures in Indonesia, India, Nigeria, Madagascar, etc. In general, the contract of importing shrimp is based on the offer made by freezing companies in producing countries. Most purchases are made on a C & F basis; consignment selling is not common. Two- to three-month spot or future shipment contract is concluded except for the cases of China and U.S.S.R. Importers sometimes provide exporters with short-term loans or advance payment in order to procure a guaranteed supply of shrimp from them. Also, experts are dispatched to producing countries for technical advice and guidance on the improvement of the product quality.

B. Squid and Cuttlefish

Pattern of supplies

Japan is the world's largest squid (including cuttlefish) producing nation in the world, the national landings having ranged between 450 000 tons and 600 000 tons over the last decade. The principal species caught is Todarodes pacificus (surume-ika), the production of which has gradually declined during the last decade totalling some 210 000 tons in 1977

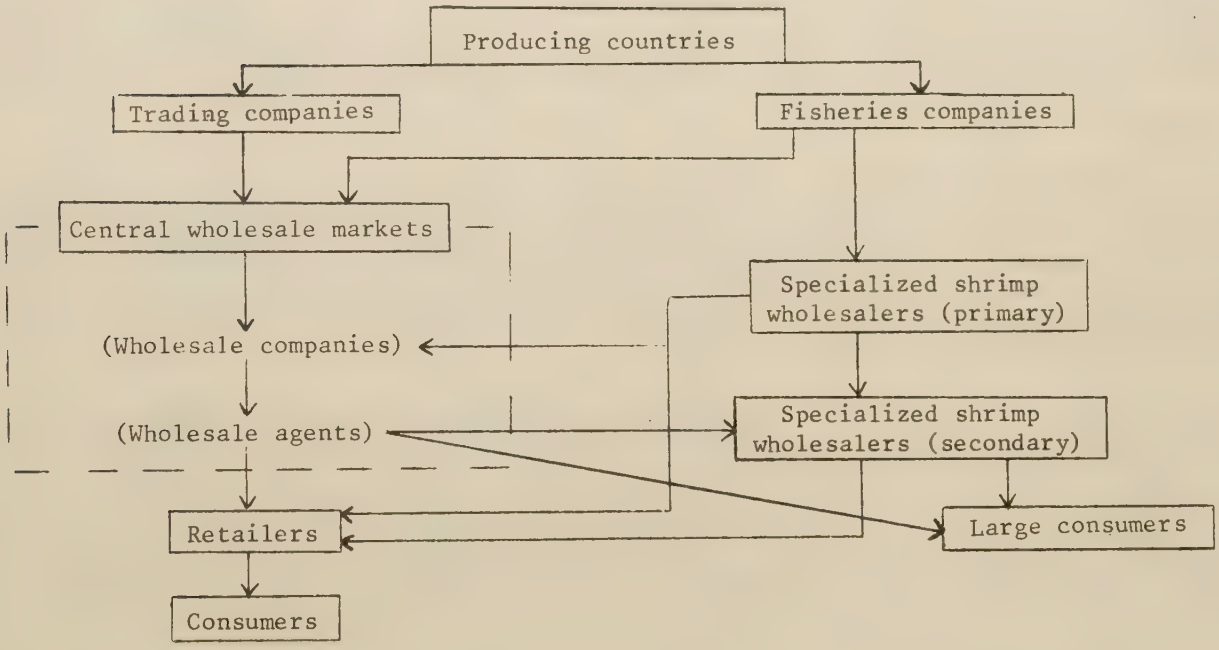
1/For example, in 1977 the export unit value of Indian Shrimp was U.S.$9.8/kg, equivalent to ¥2450/kg at an exchange rate ¥250 = U.S.$1. In 1978 that value rose to U.S.$10.5/kg which would have been ¥2625/kg if there had been no change in the exchange rate. However, since in 1978 the average rate went up to ¥177 = U.S.$1, the export value of U.S.$10.5/kg came to only ¥1859/kg, corresponding to a drop of the export value in real terms.

Table 5

Yearly amount of expenditures by commodities per household
by yearly income group
Unit: Yen/100 g

	Shrimp, lobster and crab (100 g)		
	Expenditure	Quantity	Price
All households Average	7 053	36.866	191.32
I (~ 2 040 000)	4 455	25.571	174.22
II (2 040 000 ~ 2 680 000)	6 080	32.847	185.10
III (2 680 000 ~ 3 410 000)	6 845	36.913	185.44
IV (3 410 000 ~ 4 500 000)	7 640	39.573	193.06
V (4 500 000 ~)	10 246	49.427	207.30

Source: Annual Report on the Family Income and Expenditure Survey, Office of the Prime Minister, Japan, 1977



Source: Based on Access to Japan's Import Market for Shrimp by JETRO, 1977, Japan

Figure 1 Channels of distribution of imported shrimp in Japan

as compared to 410 000 tons in 1970, a decrease of nearly 50 percent. Excessive fishing effort and the change in hydrographic condition in the Japan Sea - the most important fishing area - are considered to be the major causes for this. Increased production of Ommastrephes bartrami (akaika) fom the Northern Pacific has counterbalanced the decrease of "surume-ika" output and, therefore, the total catch of squid has been maintained fairly stable in recent years.

Cuttlefish Sepia esculenta (koika) is commercially of great significance and its output has been fairly stable during the last decade, being of the order of 15 000 tons.

Although domestic supplies of squid and cuttlefish have traditionally been sufficient for home consumption, imports have gained greater importance in the last decade.

Imports of frozen squid (including cuttlefish) have increased eight folds over the period 1970-78 reaching to 118 000 tons, and in terms of value increased nearly tenfold from Yen 4 000 million (see Statistical Annex Table VI). As stated earlier, cephalopods (squid, cuttlefish and octopus) have become one of the most important fishery items imported by Japan and in 1978 accounted for over 45 percent of the value of all seafood imports.

The leading suppliers of frozen squid and cuttlefish to Japan are the Republic of Korea, Thailand, Spain, P.D.R. of Yemen; these four countries accounted for 55 percent of total import volume in 1978. The remaining 45 percent is supplied from a variety of countries of all continents which increased from 21 countries in 1970 to 45 countries in 1978.

As can be seen in Statistical Annex Table VI, suppliers from Asian sources are by far the most important, being in the neighbourhood of 50 000 tons a year. The import from European countries has steadily increased during the period under review reaching 21 000 tons in 1978. It is worth noting that the import from North America, particularly Canada came significantly into the picture, amounting to 27 000 tons in 1978. It is only since the early 1970's that African countries, e.g. Senegal, Mauritania, Morocco, etc. made an entry into the Japanese squid market.

With the decline in dried squid (surume) production, other squid preparations have become of greater importance. In order to meet the demand, increasing quantities of semi-finished products are being imported from the Republic of Korea, Thailand, China, Argentina, etc.

Consumption trends

The pattern of utilization of squid in Japan is very varied. It includes raw, salted, dried (surume), smoked, "chinmi" type[1/] preparations, salted fermented (shiokara), canned, seasoned (tsukudani), etc.[2/] There are also innumerable recipes for fresh squid. According to Table 6, some 35 to 50 percent of the total production of squid, equivalent to an amount varying between 180 000 and 300 000 tons, is consumed fresh, subject to the landings, while the quantities used for processing have remained fairly constant at 230 000-280 000 tons per year during the last several years.

Statistical Annex Table VIII indicates that per caput consumption of fresh squid at the household level has gradually declined from 2.1 kg in 1967 to 1.7 kg in 1977. Nevertheless, squid together with cuttlefish is still the most heavily consumed of all fresh fish products. For example, consumption of fresh or frozen squid was 6.7 kg per annum per household in 1977, representing some 13 percent of total fresh seafood consumption, a proportion nearly double that achieved by other fish species.[3/] Looking at increasing quantities of total supplies of squid (domestic production plus imports) in the domestic market, this clearly points to a marked increase in apparent consumption in the institutional and catering sectors.

1/ This denomination covers a range of seasonal, roasted products such as "saki-ika", in which squid is cut into strips and"supata-yaki" in which squid is treated whole

2/ For further information, see "Production, Trade and Consumption in Cephalopods and Cephalopod Products". Hotta, M., FAO Fisheries Circular No. 340, 1976

3/ e.g., mackerel, 7 percent; horse mackerel, 5.3 percent; tuna, 6.5 percent

Table 6

Disposition of squid catch

Year	Total catch	Fresh/ frozen	Total processed	Dried	Smoked	Prepara- tions	Salted/ fermented	Canned	Salted	Bait
1972	599 450	314 965	254 485	52 329	1 196	178 650	13 160	8 201	949	30 000
1973	486 257	178 465	277 792	43 476	2 836	211 944	12 296	5 806	1 434	30 000
1974	469 967	211 238	228 729	12 896	2 184	196 665	13 381	2 708	895	30 000
1975	530 927	236 139	264 788	14 656	2 460	223 480	14 735	8 266	1 191	30 000
1976	490 688	177 661	283 027	16 268	4 860	237 970	16 422	6 229	1 278	30 000
1977	490 448	144 765	345 683	37 716	7 064	278 030	16 071	5 578	1 224	30 000

Source: Compiled on the basis of the Annual Report in Marketing of Fishery Products, Ministry of Agriculture, Forestry and Fisheries, Japan, 1978

Among processed squid, preparations which are generally classified as "chinmi" are by far the most important in terms of quantity. The annual production has ranged between 40 000 and over 55 000 tons during the last few years (see Statistical Annex Table VII), and in 1976 for example, some 240 000 tons of raw material were used for this purpose.

There has been an increase in production of smoked and salted fermented (shiokara) product. In spite of price rises, demand for these products - consumed mainly as snacks or as accompaniment to alcoholic drinks - has continued to grow. Todarodes pacificus (surume-ika) is generally used as the raw material and in recent years "shiokara" with yeast has gained considerable popularity.

Production of canned squid is relatively unimportant. Utilization of squid for canning has declined in recent years. In 1977 some 5 500 tons of raw material were used to produce 166 000 standard cases. Economically, canned squid is an inferior item (i.e., having a negative income elasticity) and its decline is due almost entirely to the rise in living standards and the switch to more luxurious food items.

Drying used to be the most important process for preserving squid in the past, mainly because the finished product (surume) had good keeping qualities and could be stored for considerable periods. In recent years, "surume" has somewhat declined in importance and in 1977 only 8 percent of the total squid catch was used for this purpose. "Surume" is often used for ceremonial and festive occasions in Japan.

Price trends

Statistical Annex Table IX shows the unit value c.i.f. of imports of squid including cuttlefish by major supply sources. It should be noted that the unit value varies considerably from country to country because the imported species differ according to countries. Cuttlefish (Sepia spp.) is marketed at higher prices than squid in the Japanese market. For example, in 1977, the unit value of Senegalese products obtained the highest level, i.e., U.S.$ 2.7/kg as their exports consisted almost entirely of Sepia officinalis (mongo-ika) which in Japan commands the highest price as compared to other cephalopods. Thai exports are mostly composed of Sepia esculenta (ko-ika) while P.D.R.Y.'s exports consist of Sepia pharaonis. Spain exports both cuttlefish (Sepia officinalis) and squid (Loligo vulgaris) into the Japanese market.

As can be seen in the Table, commodities from these countries are in general priced higher.

The general trend of the wholesale price of squid particularly "mongo-ika" has followed very closely the upward and downward movement in international prices. It is obviously seen in Table 7, which shows the average prices paid for frozen "mongo-ika" at the Tokyo Central Wholesale Market. For example, "mongo-ika" imported from Senegal registered a unit value of U.S.$ 2.8/kg in 1975, U.S.$ 2.3/kg in 1976 and U.S.$ 2.7/kg in 1977. As against this, the wholsesale prices of "mongo-ika" in Tokyo were Yen 898/kg in 1975, Yen 948/kg in 1976 and Yen 895/kg in 1977.

In the case of squid, the influence of imported squid price on the domestic market seems to be less. The wholesale prices of fresh "surume-ika" has shown a drastic increase during the last several years reaching Yen 730/kg in Tokyo in 1978, indicating an increase of about 60 percent over 1974. However, the price index of "surume-ika" cannot necessarily be described as very high when compared with those of other species such as saury, horse mackerel, flounder and so on (see Statistical Annex Table IV).

Table 7

Average prices of squid and cuttlefish at the Tokyo Central Wholesale Market
(Yen/kg)

	1974	1975	1976	1977	1978 1/
Wholesale prices					
Todarodes pacificus (surume-ika)					
Fresh	458	458	558	692	727
Frozen	423	410	477	566	582
Sepia officinalis (mongo-ika)					
Frozen	669	898	948	895	706
Retail prices					
Todarodes pacificus (surume-ika)					
Fresh	740	820	920	1 126	1 310

1/ January to August

Source: Monthly Statistics of Agriculture, Forestry and Fisheries, November 1977, October 1978; Ministry of Agriculture, Forestry and Fisheries, Japan

Table 8

Yearly amount of expenditure by commodity/ household by yearly income group
(Unit: Yen)

	Squid (including cuttlefish) (100 g)		Dried Squid (surume) (100 g)	
	Exp.	Quan.	Exp.	Quan.
All households Average	6 816	66.656	612	2 241
I (~ 2 040 000)	5 188	52 484	492	1 867
II (2 040 000 ~ 2 680 000)	6 528	65 594	648	2 405
III (2 680 000 ~ 3 410 000)	7 166	71 440	614	2 343
IV (3 410 000 ~ 4 500 000)	7 250	70 674	678	2 343
V (4 500 000 ~)	7 947	73 088	629	2 249

Source: Annual Report on the Family Income and Expenditure Survey, Office of the Prime Minister, Japan, 1977

Market outlook

There is no doubt that in Japan at least rising standards will continue to stimulate an increase of the demand for squid and cuttlefish. The evidence of the latest family expenditure survey conducted in 1976 (Table 8) indicates a strong correlation between income and purchases of fresh squid both in terms of quantity and expenditure. Market prospects for squid and cuttlefish will therefore remain good, the former mainly for processing and the latter for "sashimi" or consumption in raw form.

The main consideration is whether the increases in supply which have enabled consumption to increase relatively rapidly (i.e., the processing sector as for production and the institutional and catering sectors as for consumption) will continue to be available. Considering the shrinking of the Japanese distant water squid fishing grounds, e.g., off New Zealand, in the Arabian Sea, the northern Atlantic, etc., and the declining trend in production in the waters around Japan, significant increases in output seem most unlikely. Increasing demand for squid will, therefore, have to be complemented by imported squid. Japan seems likely to offer an increasingly larger market for squid in the medium term, say up to 1985.

C. Dried Skipjack Tuna (Katsuobushi)

General

Total supplies of skipjack tuna in Japan, although fluctuating, have been on a rising trend for many years, and in 1977 amounted to some 320 000 tons; in the early 1970s in an average year some 35-40 percent of total supply was exported, whilst in recent years, the rate has declined to 20-30 percent. Domestic consumption has also been increasing, and by 1977 reached 235 000 tons, an increase of some 100 000 tons on the level of consumption in 1970.

In Japan skipjack tuna has traditionally been used in five main ways, i.e., fresh, frozen, dried (katsuobushi), canned and salted-fermented (shiokara). In recent years, about two thirds of the total supply has been utilized for producing "katsuobushi", 20-30 percent for freezing and the balance for canning; salted-fermented products are prepared from the viscera.

"Katsuobushi" is a specific form of "fushi"[1/] made from skipjack tuna. In recent years Japanese interest in 'katsuobushi' and other types of "fushi" has grown considerably, as it is regarded as a natural food seasoning which has less harmful after-effects than synthetic chemical food seasoning. In addition the emergence of "fushi" in packaged flake form has helped to improve its popularity among consumers because of its convenience in buying and quickness in preparation. Previously the dried skipjack was available only in small blocks which had to be flaked manually.

The steady growth in the consumption of "katsuobushi" over the last decade has been made possible by the expansion in the scale and year-round operation of the skipjack fisheries, and in particular by the development of fisheries in the southern Pacific. Joint ventures have played an important role in this, and in some countries of the South Pacific and Indian Oceans "katsuobushi" plants have been established for producing either finished or semi-processed products to be exported to Japan.

1/ "Fushi" is a seasoning product used in preparing soup and broth. It is a flaky product obtained by boiling, smoking and drying fish fillets; skipjack, bonito, mackerel, sardine and occasionally albacore and big-eye tuna are used as raw material, but skipjack is the species most highly appreciated by consumers.

The rapid growth of the consumption of skipjack in fresh form is worthy of note, a trend which can be ascribed to new product presentations, e.g., chopped or sliced skipjack tuna in a pack, as well as the development of the redistribution and transport systems. Skipjack is liable to deteriorate fairly quickly. It is said that its rate of deterioration is three times quicker than that of flounder. This factor, aside from its "seasonality" meant that fresh skipjack tuna was marketed only during the peak of the fishing season, and that the distributional area was very limited. The development of processing technology and the exploitation of new fishing grounds, however, have permitted year-round availability and the new products have obtained considerable popularity. The quantity consumed fresh rose from 15 000 tons in 1972 to 100 000 tons in 1976, although it dropped considerably in 1977.

In pre-war days, the greater quantity of canned skipjack was seasoned (yamatoni), and mostly consumed on the domestic market. Over the last 30 years, however, canned skipjack tuna in brine and in oil have gained greater popularity and the importance of seasoned products has declined. The demand has also shifted from the domestic market to foreign markets.

In 1977 the total production of canned skipjack tuna amounted to some 63 257 tons (live weight) of which 38 927 tons canned in oil, 15 377 tons canned in brine, 7 600 tons seasoned, 799 tons soaked in seasoning solution and 554 tons in other forms. The export of canned skipjack tuna in the same year was around 39 000 tons of which 24 000 tons canned in oil. About 90 percent of skipjack tuna canned in oil was exported, particularly to the United States.

Salted fermented fish (shiokara) is a highly-flavoured product traditionally used to add variety to the rice diets. "Shiokara" has been of importance as a means of preservation which permits the full utilization of a by-product. In recent years, "shiokara" has gained considerable popularity as an appetizer and hors-d'oeuvre. Production of "shiokara" made from skipjack is, however, relatively unimportant as compared with squid shiokara and salted fermented sea-urchin. About 1 000-2 000 tons of skipjack tuna "shiokara" have been produced annually during the period 1970-77. Production is on a declining trend, as a result of the rising popularity of squid shiokara.

Special factors influencing the demand for "katsuobushi"

Demand for "katsuobushi" was sluggish during the 1960s as a result of the popularity of synthetic seasonings. However, a trend toward more natural food in recent years has given rise to an increase in the demand for "katsuobushi". In 1967, the annual average household consumption of "katsuobushi" was 173 g but this had risen to 470 g by 1975, although afterwards it has declined slightly (Statistical Annex Table XI). Bearing in mind the fall in the average number of family members from 4.29 to 3.90, the increase in per caput consumption is seen to be even more striking.

Consumption of "katsuobushi" seems to have benefitted from the swing to more luxurious fish products. Apart from synthetic flavourings, the main competitor to "katsuobushi" is "kezuribushi" ("fushi" made from other species).

In the late 1960s the price ratio between "katsuobushi" and "kezuribushi" was 2.3:1 (Yen 1 309/kg as compared with Yen 573/kg). In spite of an increase in this ratio to 2.7:1 as can be seen from the above quoted Statistical Annex Table XI, the consumption of "katsuobushi" has risen as that of "kezuribushi" has fallen.

Since 1970 "katsuobushi" production and hence consumption have increased by some 70 percent from 14 000 tons to 24 000 tons (there are virtually very small quantities entering the international trade), and it seems that the decline in household consumption has been more than compensated for by increased institutional usage.

Future prospects

Income cross-section analysis indicates that the long-run prospects for "katsuobushi" consumption are more favourable than for "kezuribushi". Table 10 indicates a positive relationship between increase in income and consumption for "katsuobushi" which is not always

Table 9

Disposition of Skipjack Tuna (Katsuwonus pelamis) - Japan

live weight ' 000 tons

	1970	1971	1972	1973	1974	1975	1976	1977
Production	202.9	171.5	222.8	321.6	347.0	258.7	331.1	309.4
Imports	5.3	17.6	6.0	4.4	3.3	9.6	8.5	11.3
Total supply	208.2	189.1	228.8	326.0	350.3	268.3	339.6	320.7
Exports	69.7	69.2	83.6	145.6	143.1	70.8	98.4	86.0
Chilled, fresh, frozen	20.5	31.8	51.0	100.0	94.2	27.4	44.1	59.6
Canned	49.2	37.4	32.6	45.6	48.9	43.4	54.3	26.4
Domestic consumption	138.5	119.9	145.2	180.4	207.2	197.5	241.2	234.7
Katsuobushi	91.7	89.8	98.0	114.7	125.7	124.5	136.0	132.1
Canned	)	)		32.3	16.7	33.1	12.1	5.1	33.0
Fresh (including frozen)	) 46.8	) 30.1	14.9	49.0	48.4	60.9	100.1	69.6

Notes: Inventory adjustments are ignored

Imports - including other bonitos

Source:

Compiled on the basis of the Annual Statistical Report on Marketing of Fishery Products, Ministry of Agriculture and Forestry, 1975-79. Japan Exports and Imports, Tariff Association, Japan, 1970-78

the case for "kezuribushi". In the case of the former, consumption increases as the income rises through all the identified income groups, and the most affluent group purchased nearly 1.7 times more than the lowest group. In the case of "kezuribushi" the quantity purchased fluctuates widely from one income group to another and although the highest group purchased more than the lowest group, the difference was very small.

In recent years, price increases for "katsuobushi" have remained relatively small, the retail price in Tokyo increasing no more than 30 percent in the period 1975 to 1978 as compared, for example, with 88 percent for horse mackerel and 60 percent for squid. This would seem to be largely due to the steady expansion of the skipjack fishery which has enabled supply to keep pace with demand. Shrinkage of the Japanese skipjack fishing to grow further will, of course, offer opportunities for increased import, either of the semi-prepared raw material or else of prepared "katsuobushi", and since the production process is labour intensive this would suggest that imports might increasingly be of the prepared product. At present imports as can be seen from Table 9 are relatively small.

Table 10

Annual expenditures and quantities purchased by households

	Katsuobushi		Kezuribushi	
	Exp. (Yen)	Quan. (100 prams)	Exp. (Yen)	Quan. (100 prams)
All households Average:	1 164	3.252	273	2.027
I (~2 040 000)	962	2.855	224	1.700
II (2 040 000 ~2 680 000)	965	2.848	261	1.932
III (2 680 000 ~3 410 000)	1 009	2.718	259	1.952
IV (3 410 000 ~4 500 000)	1 264	3.523	317	2.289
V (4 500 000 ~)	1 618	4 315	306	2 261

Source: Annual Report on the Family Income and Expenditure Survey. Office of the Prime Minister, Japan. 1978

D. Herring Roe ("Kazunoko")

In pre-war days, "kazunoko" was regarded as an inexpensive popular fish product, but, with the gradual decline in production, it has become one of the most expensive and preferred fishery products. Japanese production of herring declined sharply in the 1950s with landings of less than 50 000 tons in 1955, compared with an annual average of 240 000 tons over the preceding two decades. Apart from a decrease in catch in local Japanese waters, the establishment of 200-mile zones of extended jurisdiction has virtually reduced to zero the catch of herring in the North Pacific, a fishery which took place in Soviet waters.

Under such circumstances, the price of "kazunoko" has continued to increase and attention was increasingly turned to imported supplies. Details concerning the import of herring roe are given in Statistical Annex Table XIII.

Table 11

Supply of Herring Roe (tons) and *per caput* consumption (kg)

	1970	1971	1972	1973	1974	1975	1976	1977
Import of salted roe (A)	595	788	7 378	11 076	12 573	7 611	11 698	10 275
Import of herring	6 646	5 032	7 621	10 168	5 688	8 856	5 910	30 600
Output of herring roe from the above (B)	665	503	762	1 017	569	886	590	3 060
Domestic production of salted herring roe (C)	3 663	3 655	6 615	8 641	10 355	9 126	12 055	9 958
Export (D)								
Total supply of herring roe (A) (B) (C) - (D)	4 923	4 946	14 755	20 734	23 497	17 623	24 343	23 293
Per caput consumption (kg)	0.05	0.05	0.14	0.19	0.21	0.16	0.22	0.21

Source: Compiled on the basis of the Annual Statistical Report on the Marketing of Fishery Products

Imports rose very sharply in the period 1970-73, declining in 1975 due to a reduction in Chinese exports, but recovered from 1976 onward. In addition to China, other suppliers to the Japanese market are the United States and the Republic of Korea, but Canada is by far the major source of import, even more so in recent years. The import and distribution of "kazunoko" is handled by the Hokkaido Fisheries Cooperative Federation[1/] which allocates to trading companies the quantities to be imported each year.

"Kazunoko" is marketed in two main product forms, either "hoshi-kazunoko" (dried-salted herring roe) or "shio-kazunoko" (wet-salted herring roe). Herring roes as well as other seafood delicacies known by the general denomination "chinmi" are eaten either as an hors-d'oeuvre or as an accompaniment to alcoholic drinks. The consumption tends to be concentrated on festive occasions and the demand for them is particularly high during the New Year traditional celebrations. In recent years there has been a general increase in the demand for "chinmi", with a marked shift in preference toward the more highly-valued items such as fish roe and sea-urchins.

Table 11 indicates that there was a tremendous increase in the supply of "kazunoko" from 4 900 tons in 1970 to 23 000 tons in 1977 - an increase of more than 450 percent. Per caput consumption has remained virtually stationary at around 0.20 kg during the last several years, whilst it was around 0.05 kg in the 1960s and early 1970s.

The demand for "kazunoko" is clearly and positively correlated with income, and demand can be expected to increase. The Japanese market, however, depends largely on imports with more than 70 percent of the total supply coming from foreign production in 1977, while little prospect of domestic increase is expected in view of the depleted state of the herring stocks and the consequent restrictions on herring fishery.

E. Eels and Eel Elvers

General

In the past decade the Japanese production of eels, after rising to a peak in the late 1960s, fell again to a level only a few thousand tons greater than in 1965. The decline in production in the early seventies was largely due to a disease apparently introduced with imported elvers which now provide an important source of supply for Japanese eel farms. During the last 2-3 years rapid recovery has been observed due to increased production of cultured eels, the total harvest amounting to over 29 700 tons in 1977 which was even higher than that in the late sixties. Table 12 indicates that eel consumption has risen rapidly from 0.16 kg per caput in 1973 to 0.4 kg in 1977.

Table 12

Supply structure of eel and its per caput consumption
(live weight in tons)

	1973	1974	1975	1976	1977
Production	16 969	19 160	22 951	28 291	29 732
Import	6 934	7 739	10 927	14 207	15 428
Total supply	23 903	26 899	33 878	42 498	45 160
Per caput consumption (kg)	0.16	0.17	0.303	0.376	0.396

Source: Compiled on the basis of the Annual Report on the Marketing of Fishery Products in Japan, Ministry of Agriculture, Forestry and Fisheries, 1975-79 and Japan Exports and Imports, Japan Tariff Assoc., 1973-77

1/ Address: 7-1, Kita Sanjo-Nishi, Chuo-Ku, Sapporo-shi, Hokkaido

Since 1973 imports of eels have more than doubled reaching well over 15 000 tons in 1977, though there was a slight decline from the previous year. Including also the element of import of elvers reared in Japan, the Japanese market is now dependent to a considerable degree on foreign suppliers. For the most part, eels are consumed in special restaurants as "kabayaki"[1/]. While the consumption of fresh eels in the home is low, ready-to-eat "kabayaki" has been marketed recently in increasing quantities. At one time eel consumption was rather seasonal, with purchases concentrated in the summer festival of Ushino-hi (the Day of the Ox), but recently it has become more evenly spread throughout the year.

Market prospects

Income cross section analysis given in Table 13 indicates a strong positive correlation between income and "kabayaki" consumption. As can be seen, there is a steady increase in expenditure on "kabayaki" from the least to the most wealthy income group, and households earning over 4.5 million yen per year spent nearly 2.5 times as much on this product as those earning 2 million yen or less. Thus, the prospects for future growth in consumption in response to rising income levels are good.

Moderate price increases seem unlikely to affect this assessment of the situation; in the period 1973-77, prices increased by rather more than 35 percent, but in spite of this consumption increased over the same period by several hundred grammes per head.

In order to keep pace with the growing demand in the domestic market, Japan has had for some years to import substantial quantities of elvers as well as increasing quantities of adult eels. Details of elver imports are given in Statistical Annex Table XV. From this Table two main points emerge, i.e., the declining unit value of imports from countries other than China and the recently declining total quantities of elver imports. The first point is explained by the fact that China which has been an important supplier since 1970, supplies the more expensive smaller elvers (so-called glass eel or "shirasu" which has just entered fresh water and is still translucent white in colour) early in the season. Other exporters make up the deficiencies in supplies later in the season with larger and less expensive elvers.

Table 13

Yearly amount of expenditures by commodities
per household by yearly income group
Unit: Yen

	Kabayaki (broiled and seasoned eels)
All households Average (Yen)	3 224
I (~ 2 040 000)	2 019
II (2 040 000 ~ 2 680 000)	2 558
III (2 680 000 ~ 3 410 000)	3 012
IV (3 410 000 ~ 4 500 000)	3 506
V (4 500 000 ~)	5 025

Source: Annual Report on the Family Income and Expenditure Survey. Office of the Prime Minister, Japan, 1977

1/ Broiled strips of eel on skewers flavoured with a mixture of soy sauce, sugar and mirin - a sweet rice wine. "Unagi donburi" (essentially "kabayaki" with hot rice) is another traditional Japanese eel dish.

The reason for the decline in the total quantity of imports since 1973 is partly due to seasonal factors, but may also be due to the improved results of collection of fry in Japanese waters as a result of pollution control. If pollution continues to be successfully controlled, this may lead to a gradual contraction in the Japanese market for imported elvers, although there will still always be seasonal demand due to special oceanographic factors affecting the supply of Japanese elvers. Better prospects may exist for fully grown market-size eels.

F. Agar ("Kanten")

Agar, or "kanten" as it is called in Japan, is a colloid extracted from certain algae of the class Rhodophycea. Insoluble in cold water, it is soluble in boiling water to make a liquid which, when cooled, forms a firm, clear, resilient gel possessing suspending, stabilizing and thickening properties. It is extensively used in many parts of the world in a wide variety of food and drink preparations, notably in jelly desserts, confectionery, ice-creams, yoghurts and similar dairy products, in bakery products, soups, sauces, canned items, etc. Agar also has many uses in microbiology, especially as a culture medium, in cosmetics, medicines, pharmaceuticals and a host of industrial applications.

In Japan "kanten" is used principally as a food ingredient, both directly in the home as a supplement to rice, vegetable and fish dishes and, particularly, by the food processing industry.

Japan is the largest producer of "Kanten" in the world with an annual output of between 2 000 and 3 000 tons, representing approximately 40 percent of world production. Other major producers are the U.S.S.R., Spain, Portugal, the Republic of Korea, Argentina, Morocco, China and the U.S.A. Total world output is presently of the order of 7 000-8 000 tons per year. The commodity is marketed in various forms - powder, flakes, shreds, sticks or bricks[1/].

The Japanese "Kanten" industry

The production of Kanten is a long-established seasonal cottage industry in mountainous areas of Japan, where the cold winter climate is suitable for the basic extraction, freezing/thawing and dry processing. "Kanten" is now also produced on an industrial, year-round basis, using sophisticated adaptations of the basic methods. As the raw materials, mainly Gelidium and Gracilaria-type seaweeds, and the essential processing methods are more or less the same, there are no significant differences in the characteristics of the products produced by natural means ("tennen kanten") or by industrial methods ("kogyo kanten"), although the product form may vary and industrially-produced "kanten" generally possesses a higher degree of chemical purity.

Japanese production of "kanten" has tended to decline in recent years, that of "tennen kanten" especially, principally because of shortage of domestically-produced raw material (Statistical Annex Table I). As a result the need for imports, both of dried seaweed and of agar, has increased and Japanese exports of "kanten" products have fallen (Statistical Annex Table XVI).

The domestic supply situation has been further aggravated by rapid and substantial rises in costs as a result of labour shortages, rising prices for raw material, and dramatic world-wide increases in prices for all kinds of seaweed-based gels, which tripled in the space of three years.

1/ For a fuller description see "Production, Trade and Utilization of Seaweeds and Seaweed Products, Naylor, J., 1976, FAO Fisheries Technical Paper No. 159

Japanese imports of "Kanten" and agar-bearing seaweeds

To compensate for the falling level of domestic production, Japanese imports, both of finished "kanten" and of the seaweed raw material, rose substantially in the early 1970s.

In more recent years, perhaps partly influenced by the general economic slump, but principally because of the extraordinarily rapid rise in international prices, Japanese imports of these commodities have somewhat declined.

The major suppliers of agar to Japan are the Republic of Korea (especially in the form of "kanten" shreds), Portugal and Argentina. The latter is also an important exporter of Gracilaria seaweed to Japan, for agar extraction. Other major sources of supply of dried seaweeds to Japan are Chile, Egypt, Mexico and the Malagasy Republic, Brazil, China and the Philippines.

In the case of both "kanten" and the dried seaweed raw material, Japanese imports have been boosted by the negotiation of joint ventures and/or financial and technical assistance arrangements between Japanese companies and local enterprises, notably in South America and Portugal.

Market prospects

It is estimated that some 80 percent of "kanten" supplies in Japan are used in food processing (Hayashi and Okazaki, 1970), above all in the preparation of various kinds of confectionery, but also in "Mitsumame" (a popular dish consisting of boiled beans and other ingredients mixed with molasses), preserved foods, dairy products, canned meats and fish, etc. About 5 percent is used in industrial, pharmaceutical and cosmetic applications, the balance being consumed directly in the home, notably in the form of "tokoroten", i.e., bars of "kanten" jelly which are extruded, by means of a special kitchen tool, into small pieces readily blendable together with soy sauce with other ingredients for the preparation of cereal, meat and fish dishes.

The use of "kanten" in Japan is thus extremely varied and well established. "Kanten" is not regarded as a luxury product, and demand may thus not be particularly affected by future income growth. The influence of population trends and a continued expansion of demand for food and confectionery products of many kinds will, however, be positive factors in maintaining and indeed promoting Japanese demand for "kanten" in general.

Domestic resources of the basic seaweed raw materials are limited and, compared with edible seaweed products such as "nori" and "wakame", are not easily cultivatable. There are thus excellent opportunities for overseas producers to increase their supplies of both the finished "kanten" product and the basic seaweed materials to Japan.

Some twenty countries are already producing agar in various forms from indigenous and imported resources of algae. The economic and technical feasibility of exploiting untapped resources of agar-bearing seaweeds has been discussed elsewhere in detail (see, inter alia, Naylor, J., 1976). Clearly, however, there are excellent prospects for a number of developing countries to build a valuable export trade in agar and the basic seaweeds with Japan and other major markets.

It should finally be noted that agar products and the agar-yielding Gelidium and Gracilaria weeds are but one aspect of a much wider market in seaweeds and seaweed products. In Japan and in other countries, excellent markets exist, and are likely to expand, in other algaic gels such as carrageenan and algin (which have similar uses to agar) and in the basic raw materials of red and brown dried seaweeds.

APPENDIX I

JAPAN'S IMPORT QUOTA SYSTEM

Under the Import Quota (IQ) System a Japanese importer is required to obtain a certificate from the Agriculture and Marine Division of the Japanese Ministry of International Trade and Industry and present it to an authorized foreign exchange bank together with an import licence. Quotas under the system are usually allocated to approved importers on the basis of their past import performances. Persons or companies that have approval for fishing with the 200-mile zone of extended jurisdiction of a foreign country under joint venture arrangement with an overseas fishing company may also apply for import quotas. The Table below shows, as of 1979, the unliberalized items which come under the IQ system.

List of Non-Liberalized Fishery Products (April 1979)

BTN 1/ Tariff Number	Commodities
03.01	live, fresh, chilled, frozen: (including Alaska pollack) herring, cod, yellow tail, mackerel, sardine, horse mackerel, saury, cod roe
03.02	salted, brine soaked, dried: herring, cod, yellow tail, mackerel, sardine, horse mackerel, saury, cod roe, boiled and dried sardine (niboshi)
03.03	live, fresh, chilled, frozen, salted, brine soaked, dried: scallop, shell-ligament, squid except Sepia officinalis (mongo-ika)
12.08	edible seaweeds: Amanori (porphyra) Kelp (Laminaria japonica) Aonori (Interomerpha) Hitoegusa (Monostroma)
21.07	prepared edible seaweeds: Amanori (porphyra) Kelp (Laminaria japonica) Aonori (Interomerpha) Hitoegusa (Monostroma)

Source: "Suisan Nenkan" (Fishery Year Book) 1978, Suisan-sha, Japan

1/ Brussels Tariff Nomenclature

APPENDIX II

COASTAL FISHING GROUNDS RENOVATION AND DEVELOPMENT PROGRAMME OF JAPAN

It is roughly estimated that the area of waters of 200 m in depth is some 300 000 km^2, corresponding to about 80 percent of the area of the land, of which some 120 000 km^2 could be exploited for fishery purposes by means of the present technical and financial capacities. Until now only a total of 10 000 km^2 have been subject to fishery exploitation.

In 1976 the Japanese Government started to implement "The Seven-Year Coastal Fishing Grounds Renovation and Development Programme" with a total budget of Yen 200 000 million, equivalent to U.S.$ 2 000 million.

The Programme aims at implementing the following major projects: (a) establishment of fish shelters, (b) establishment of algae grounds and inter-tidal beaches suitable for the spawning and growing of fish, and establishment of fish culture grounds, and (c) preservation of fishery environments by improved water quality and clearance of fouled bottoms in coastal waters. The area of the waters which will be covered by this Programme is estimated at only one percent of the exploitable areas of the Japanese coastal waters (i.e., 12 000 km^2). The Programme is described in some detail in the following table:

	Type of Projects	Contents of Projects	Duration (year)		Gov't subsidy rate 1/
A	Establishment of medium-scale fish shelters	Setting up concrete blocks and other durable materials in waters	1	Prefectural gov'ts municipal offices, fishermen's cooperatives prefectural federations of fishermen's cooperatives	5/10
	Establishment of large-scale fish shelters		1	Prefectural gov'ts	6/10
	Establishment of fish shelters in deep waters in coastal area	Establishment of a group of fish shelters by using durable materials	4	Prefectural gov'ts	7/10
B	Establishment of nursery grounds for fry	Establishment of algae grounds and dry beaches	1-2	Prefectural gov'ts, municipal offices	6/10
	Establishment of large-scale culture grounds	Establishment of shelters for adult fish and jetting, etc., dredging, ploughing, etc. of culture grounds	3-5	Prefectural gov'ts	6/10
	Establishment of fishing grounds	Construction of wave fighting banks, improvement of sea-water circulation	1-3	Prefectural gov'ts, municipal offices	5/10
	Development of shallow seawater fishing grounds		3-5	Prefectural gov'ts	5/10
C	Preservation of the environments of fishing ground	Small-scale: Cleaning of bottoms, etc.	1	Prefectural gov'ts, municipal offices	5/10
		Large-scale: Dredging, construction of waterway, etc.			6/10

1/ Subsidy rate of the National Government

APPENDIX III

SHRIMP IMPORT FORMALITIES AND TARIFF

A. Sanitary regulations, quality standard and marking regulations applied to the import of shrimp

The Japanese Food Sanitation Law, as well as other relevant laws and regulations have been established to control the production and distribution of food, both in the interest of health and for the protection of the consumer. In obeyance to a provision which applies to all imported foodstuffs intended for human consumption, shrimp is liable to examination by food sanitation inspectors at the point of entry, such an examination is conducted on the basis of the standards set out exclusively for shrimp. The major points to be examined are the following:

1. Quality requirement

Shrimp is classified into five grades under the provisions of marking specification and only those higher than grade 3 are accepted as appropriate to be imported. In this connexion, appearance, colour, flavour (odour), tissue or texture, uniformity and glaze are examined.

2. Temperature

The temperature of frozen shrimp should be below -18°C at the inner centre of the product.

3. Labelling

The display of manufacturers, country of origin, description and weight of contents must be clearly indicated.

4. Size of assortment

The size assortment of shrimp is made on the basis of the following table. The table indicates that, for example, if the number of shrimp per lb is between 11 and 15, the weight of each shrimp should be within the range of 29-43 g.

Size Assortment of Shrimp

No. of Shrimp per lb	Weight of a shrimp
10 or less	43 or more (g)
10-15	29-42
16-20	22-29
21-25	18-22
26-30	15-18
13-35	13-15
36-40	11-13
41-50	9-11
51 or more	9 or less

5. Sanitary requirements

Sanitary requirements for frozen shrimp state that the product should be clean physically, chemically and biologically. Volatile basic nitrogen (UB-N) content, examined to ascertain the freshness of the product, should be below 25 mg per 100 g under Edward Conway's micro-diffusion method. As for bacteria plate count, it should be below 100 000 per 1 g, as the standard plate count (SPC) method is employed at the temperature of 37°C. It is also essential that E. coli M.P.N. should be negative per 100 g when the E.C. test method is applied.

6. Sampling and inspection

To determine whether samples extracted at random from a lot meet the quality requirements mentioned above, tests are conducted on the basis of the following two score tables. If defective units do not exceed the count specified in column A in the tables, that lot is regarded as sound.

Table 1

Score Table (the weight of a unit is more than 1 kg)

Size of lot	Count of samples	Unit Count	
		A (Sound)	B (Defective)
1-10	All	0	1
11-100	10	1	2
101-500	15	1	2
501-1000	25	2	3
1001-5000	35	3	4
More than 5001	50	4	5

Table 2

Score Table (the weight of a unit is below 1 kg)

Size of lot	Count of samples	Unit Count	
		A (Sound)	B (Defective)
35-1000	35	3	4
1001-5000	50	4	5
5001-10000	75	6	7
10001-20000	110	8	9
20001-50000	150	10	11
More than 50001	225	14	15

Import Duties on Shrimps

BTN No.	Description	Rate of Duty			
		General	GATT	Preferential	Temporary
03.03	Crustaceans and molluscs, whether in shell or not fresh (live or dead) chilled, frozen, salted, in brine or dried; crustaceans, in shell, simply boiled in water:				
	1. Shrimps, prawns and lobsters:				
	(i) Fresh (live or dead), chilled or frozen				
	Live	(10%)	(5%)		5%
	Fresh (dead), chilled or frozen	(10%)	(5%)		5%
03.03.1	(ii) Other	(15%)	(7.5%)	4%	6%
16.05	Crustaceans and molluscs, prepared or preserved:				
	1. Smoked:				
	Shrimps, prawns and lobsters	(15%)	(7.5%)	free	(7.5%) 6%
	2. Other				
	(i) Shrimps, prawns and lobsters:				
	Chilled or frozen, after simply boiled in water or brine	(20%)	(15%)		(6.25%) 5%
	Simply boiled in water or in brine salted or dried, after simply boiled in water or brine	(20%)	(15%)	4%	(7.5%) 6%

Source: Ministry of Finance, 1978

Note: a bracket denotes a rate which at present is not applied

B. Tariffs and trade regulations

The form of tariff used by Japan is based on the internationally agreed system of classification known as the Brussels Nomenclature. In Japan there are four sets of tariff rates: general, GATT[1/], temporary, and preferential, with the last permitting partly duty-free imports (see Table on page 32).

The import tariff for fresh and frozen shrimp in the shell is 5 percent, and for peeled shrimp 4 percent for preferential duty or 6 percent for temporary duty. For smoked shrimp, the preferential duty is free and 5 percent is levied for shrimp frozen after boiling. For unfrozen dried shrimp, the preferential duty is 4 percent and the temporary duty is 6 percent.

The value to be declared on customs entries represents the value at the time when the goods are entered. The value of any imported goods for the calculation of ad valorem duties is the C and F value, but in practice duties are calculated on the basis of actual imported value at the time the goods are entered for home use including freight, insurance, commission, and all other costs, charges, and expenses incidental to the sale and delivery of the goods to the buyer at the port or place of importation, all having been borne by the seller.

1/ General Agreement on Trade and Tariffs

APPENDIX IV

THE IMPORT QUOTA SYSTEM FOR SQUID IN JAPAN

Imported squid (including cuttlefish) are divided into nine groups according to the form of the commodity presentation: (1) live, (2) fresh, (3) frozen, (4) chilled, (5) salted, (6) brine-cooked, (7) dried, (8) smoked and (9) prepared or preserved[1/]. Of these, two items (8 and 9) are liberalized, while the rest (1 to 7) are designated as non-liberalized items. Non-liberalized items are subject to the import quota (IQ) which is determined by the Government each year by taking into account the current demand and supply situation for that commodity.

Items 1 to 6 are generally categorized as "raw" squid and the others as "dried" squid. Raw squid are subdivided into cuttlefish "mongo-ika" and squid. The quota for "mongo-ika" is determined in quantity terms twice a year and the commodity may be imported from any country. Each quota is subdivided, with a part going exclusively to domestic trading firms and a part to firms participating in the Government's import-oriented programme[2/].

The IQ for the other squid (i.e. other than "mongo-ika") is also divided into two. One category is set aside exclusively for the Republic of Korea and is determined twice a year in value terms - this is allotted only to trading firms. The other category is the IQ for General Fishery Products which was applicable to 98 countries in 1978. In this instance, the quota is determined twice a year in quantity terms and distributed to trading firms, joint ventures and the processing sector.

The quota for dried squid is determined once a year and is classified into two, a quota for Korean Fishery Products and a quota for General Fishery Products; the former is allotted only to trading firms and the latter to both trading firms and the processing sector.

It should be mentioned, however, that although quotas are intended to regulate imports and even cut prices, they are not always fully utilized. Importers are reluctant to handle squid for a number of reasons, including the relatively low unit value (compared with, say, shrimp) and prices fluctuate sharply in sympathy with local landings. Domestically produced squid are generally of better quality than the imported product, and importers purchasing forward can lose heavily if local landings suddenly increase. They are, therefore, rather wary of purchasing squid abroad.

1/ Includes canned, boiled, salted fermented and preparations

2/ There are three aspects of the import-oriented programme: (1) where fishery agreements are in existence; (2) where joint ventures have been launched with a share of over 40 percent on the Japanese side; and (3) where squid fishing projects are included in the business plan of the overseas joint enterprises

IQ SYSTEM FOR SQUID IN JAPAN

Items	Sub-Items	Kind of IQ System and Countries	Firms to which IQ System is Applicable	Types and Nos. of Quota Allotment
Raw Squids	Mongo-ika	Can be imported from any country	1. Domestic trading firms 2. Joint ventures participating in import-oriented programme	In quantity terms twice a year
	Other squids	1. IQ for Korean Rep. fishery products (applicable only to Korea Rep.)	Domestic trading firms	In value terms twice a year
		2. IQ for general fishery products (applicable to 62 countries)	1. Domestic trading firms 2. Joint ventures participating in import-oriented programmes 3. Processors	In quantity terms twice a year
Dried Squids	Dried Squids	1. IQ for Korean Rep. fishery products	Trading firms	In quantity terms once a year
		2. IQ for general fishery products (applicable to 62 countries)	1. Trading firms 2. Processors	In quantity terms once a year

APPENDIX V

FEATURES OF SKIPJACK TUNA AND ITS RELATED SPECIES
OF THE MACKEREL FAMILY (SCOMBRIDAE)

Genus	Scientific name	Common English name	Average size	Habitat
AUXIS Cuvier	Auxis rochei	Bullet tuna	20-35 cm	Indo-Pacific, Atlantic and Mediterranean
Ditto	A. thazard	Frigate tuna	25-40 cm	Indo-Pacific and Atlantic
CYBIOSARDA Whitley	Cybiosarda elegans	Leaping bonito		Northern 3/4 of Australian coast
EUTHYNNUS Lütken in Jordan and Gilbert	Euthynnus affinis	Eastern little tuna or Kawakawa	50-60 cm	Indo-Pacific; few records from the Eastern Pacific
Ditto	E. alletteratus	Atlantic little tuna or little tuna	50-60 cm	Atlantic, Mediterranean and sporadic occurrence in Black Sea
Ditto	E. lineatus Kishinouye	Black skipjack		Eastern Pacific; stray specimen recorded in Central Pacific
KATSUWONUS Kishinouye	Katsuwonus pelamis	Skipjack tuna	40-80 cm	Cosmopolitan in warm waters; absent from Black Sea
ORCYNOPSIS Gill	Orcynopsis unicolor	Plain bonito		West coast of Africa, northward from Dakar and in the Mediterranean
SARDA Cuvier	Sarda australis	Australian bonito		South-eastern coast of Australia from the tropic of Capricorn south to Tasmania and at Norfolk Is.
Ditto	S. chiliensis	Eastern Pacific bonito	65 cm	Eastern Pacific from Vancouver Is. to Baja California, Peru and northern Chile; absent from truly tropical waters
Ditto	S. orientalis	Indo-Pacific bonito	30-50 cm	Indo-Pacific, east coast of Africa, Red Sea, Arabian Sea, Gulf of Bengal, Western Australia, Indonesia, China, Japan, Hawaiian waters, Central America to Ecuador incl. Galapagos Is.
Ditto	S. sarda	Atlantic bonito	30-50 cm	Atlantic Ocean, Mediterranean and Black Sea

APPENDIX VI

GRADING OF HERRING ROE

Regulations for "SHIO KAZUNOKO" Salted Herring Roe[1/] in Hokkaido, Japan

	First	Second	Third	Fourth	Fifth
Quality	1. Furiko[2/] awako[3/] and immatured roe[4/] are not mixed 2. Fully bleached 3. Salt is fully permeated	Same as 1. on the left 2. Ordinarily bleached 3. Salt is fully permeated	Same as 1. on the left 2. Not very well bleached 3. Salt is fully permeated	Same as 1. on the left 2. Not well bleached 3. Salt is fully permeated	Awako and immature roe is not mixed
Lustre	1. Clear yellow 2. Not contaminated	1. Yellow brown 2. Not contaminated	1. Yellow brown 2. Slightly contaminated	1. Brown 2. Very much contaminated	
Flavour	Possess specific flavour	Flavour is not lost	Contains a slight offensive smell	Contains little offensive smell	Inferior to fourth
Form	1. Fine shape Not cracked 2. Length of a piece is over 7.5 cm	1. Ordinary shape Not very much cracked 2. Length of a piece is over 4.5 cm	1. Ill formed much cracked 2. Length of a piece is over 1.5 cm	1. Ill formed much cracked 2. Length of a piece is less than 1.5 cm	
Quantity of salt used	1. Slightly salted product: more than 10 percent of salt as against the weight of fresh roe	Same as the left	Same as the left	Same as the left	Same as the left

1/ Fresh roe of herring on which salt was sprinkled
2/ Grains of roe discharged from fresh body adhere to each other and solidify, and then make "furiko". This does not present an ordinary form of KASUNOKO
3/ One or several grains of roe adhere and solidify, and make "Awako"
4/ Lack of elasticity and fragile

	First	Second	Third	Fourth	Fifth
	2. Considerably salted product: more than 20 percent of salt as against the weight of fresh roe				
Foreign object	Should not be present	Same as the left	Same as the left	Same as the left	Same as the left

Chinese roe are graded into ten categories according to the quality of the roes. The product is salted and packed in a wooden box. On the other hand, Canadian roe are graded into five categories, all products being soaked in brine.

Grades of Canadian Salted Raw Material Roe

Grade	Name	Form
1.	Completely matured roe	Full shape, more than 3.5 inches long and over 10 g in weight. Excluding broken form
2.	ditto	Full shape, 2-3.5 inches long. Including broken form
3.	ditto	Broken form of 0.5-2 inches
4.	Triangle-shaped roe	All spawned roe
5.	Premature roe	Premature roe or broken form of less than 0.5 inches

Grades of Chinese Raw Material Roe

Grade	Name	Form
1st		
A	Full shape	One piece of roe weighs over 50 g
B	ditto	One piece of ore weighs 35-50 g
C	ditto	One piece of roe weighs 20-35 g
D	ditto	One piece of roe weighs less than 20 g
2nd		
A	Full shape, broken form	One piece of roe measures over 5 cm
B	Full shape, broken form	One piece of roe measures 1.5-5 cm
3rd		
A	Premature roe	One piece of roe measures over 5 cm
B	ditto	One piece of roe is less than 5 cm
4th	Triangle-Shaped	Roe discharged outside the fish body, broken form of less than 1.5 cm
5th	Broken form	

APPENDIX VII

IMPORT REQUIREMENTS[1/] AND TARIFF OF EELS, EEL ELVERS AND PROCESSED EELS

Commodities	Size	Packing
Live eels	3 - 6 eels per kg	Packed in polyethylene bags with water and oxygen. The bag of eels is placed in a cardboard carton. The net weight of a carton should be 12 kg when transported by regular air flight and 20 kg when transported by chartered flight.
Live elvers (shirasu)	5000 - 6000 elvers per kg	1 - 3 kg of elvers are packed in a cardboard carton. The rest is as above
Processed eels (shiroyaki)[2/]	60 - 90 g per skewer	Frozen processed eels are packed in a cardboard carton

1/ There are at present no standard import regulations or requirements for the import of eels, eel elvers and processed eels. The above indicates the form and methods which have been customarily adopted by Japanese importers

2/ Raw material for "Kabayaki", which is processed into ready-to-cook form, i.e., gutted and broiled

Customs rate for imports of eels, eel elvers (shirasu), herring roe (Kazunoko), AGAR (Kanten) and dried skipjack tuna (Katsuobushi)

Commodities	Product form	Duty Rate
eel elvers		free
eels	live	5%
eels	prepared	9%
		12%
herring roe		15%
agar (Kanten)		120 yen/kg
dried skipjack tuna (Katsuobushi)		7.5%

APPENDIX VIII

LIST OF IMPORTERS

Major Importers of Shrimp

Name of Importers	Address	Telephone
C. Itoh & Co. Ltd.	4, 2-chome, Honcho, Nihonbashi, Chuo-ku, Tokyo	243-1111
Kanematsu-Gosho Ltd.	5, 2-chome, Takara-cho, Chuo-ku, Tokyo (Central P.O. Box No. 141)	562-7060
Kyokuyo Co., Ltd.	Chiyoda Bldg., 1-1, 2-chome, Marunouchi, Chiyoda-ku, Tokyo	211-5461
Marubeni Corporation	4-2, Ohtemachi, 1-chome, Chiyoda-ku, Tokyo	282-4750/1
Mitsubishi Corporation	3-1, Marunouchi, 2-chome, Chiyoda-ku, Tokyo	210-6672
Mitsui & Co. Ltd.	2-9, Nishi-Shinbashi, 1-chome, Minato-ku, Tokyo	505-4653
Nichimen Co., Ltd.	1-6, Takara-cho, Chuo-ku, Tokyo	242-2411
Nichiro Gyogyo Kaisha Ltd.	Shin-Yurakucho Bldg., 1-12-1, Yurakucho, Chiyoda-ku, Tokyo	214-6161
Nippon Reizo Kabushiki Kaisha, Ltd.	5-7, Minato 3-chome, Chuo-ku, Tokyo	551-2101
Nippon Suisan Kaisha Ltd.	11th Floor, Nippon Bldg., 6-2, 2-chome, Otemachi, Chiyoda-ku, Tokyo	279-3331
Nissho-Iwai Co., Ltd.	2-4-5, Akasaka, Minato-ku, Tokyo	276-2111
Taiyo Gyogyo Kabushiki Kaisha	1-5-1, Marunouchi, Chiyoda-ku, Tokyo	216-0811
Tomen Co. Ltd.	Iino Bldg., 2-11, Uchisaiwai-cho, Chiyoda-ku, Tokyo (C.P.O. Box 183 Tokyo)	506-3401
Taiyo Nosuisan, Co. Ltd.	Kākyo Building, 2-15-14, Tsukiji, Chuo-ku, Tokyo	541-4326
Yokohama Keito, Co. Ltd.	1-1-7, Mori-ya-cho, Kanagawa, Yokohama	461-6431
Tomeu Suisan, Co. Ltd.	77 building, 4-14-11, Ginza, Chuo-ku, Tokyo	542-3721-5
Hokuyo Shokai, Co. Ltd.	Tokyo Ryutsu Centre Building, 6-1-1, Heiwajima, Ohta-ku, Tokyo	767-7511

Major importers of herring roe (Kazunoko)

Name of Importers	Address	Telephone
Alaska Trading Co., Ltd	Shinkokusai Bldg., 3-4-1, Marunouchi, Chiyoda-ku, Tokyo	212-2611
C. Itoh & Co., Ltd.	4, 2-chome, Honcho, Nihonbashi Chuo-ku, Tokyo	639-5111
Hoko Fishing, Co., Ltd.	No. 2-4, 1-chome, Tsukiji, Chuo-ku, Tokyo	542-5411
Hanwa Kogyo Co., Ltd.	1-13-10 Tsukiji, Chuo-ku, Tokyo	544-2323
Japan Co-operative Trading Co., Ltd.	Seikyo-Kaikan, 1-13, 4-chome, Sendagaya, Shibuya-ku, Tokyo	404-3251
Kanematsu-Gosho Co., Ltd.	5, 2-chome, Takara-cho, Chuo-ku, Tokyo (Central P.O. Box No. 141)	562-7060
Kasho Co., Ltd.	14-9, 2-chome, Nihonbashi Edobashi, Chu-ku, Tokyo (P.O. Box No. 150 Nihonbashi, Tokyo)	270-5221
Kyokuyo Co., Ltd.	Chiyoda Bldg., 1-1, 2-chome, Marunouchi, Chiyoda-ku, Tokyo	211-5461
Marubeni Corporation	4-2, Ohtemachi, 1-chome, Chiyoda-ku, Tokyo	282-4750/1
Mitsubishi Corporation	3-1, Marunouchi, 2-chome, Chiyoda-ku, Tokyo	210-6672
Mitsui & Co., Ltd.	2-1 Ohtemachi, 1-chome, Chiyoda-ku, Tokyo	285-5971
Nakamura Suisan Co., Ltd.	3-3-15, Kaigan, Minato-ku, Tokyo	452-3756
Nemuro Suisan Kabushiki Kaisha	7-18, 5-chome, Chuo, Nakano-ku, Tokyo	381-2725
Nichiro Gyogyo Kaisha Ltd.	Shin-Yurakucho Bldg., 1-12-1, Yuraku-cho, Chiyoda-ku, Tokyo	214-6161
Nozaki & Co., Ltd.	7-16-19, Ginza, Chuo-ku, Tokyo	542-9211
Sumitomo Shoji Kaisha, Ltd.	New Sumitomo Shoji Bldg., 2-2, Hitotsubashi, 1-chome, Chiyoda-ku, Tokyo	217-5000
Taiyo Gyogyo Kabushiki Kaisha	1-5-1, Marunouchi, Chiyoda-ku, Tokyo	216-0811
Tokyo Marunouchi Shoji Co., Ltd.	16-9, 2-chome, Uchikanda, Chiyoda-ku, Tokyo	256-1111
Toshoku, Ltd.	New Marunouchi Bldg., 2-4, Muromachi, Nihonbashi, Chuo-ku, Tokyo	244-2211

Tomen, Ltd.	Iino Bldg., 2-11, Uchisaiwaicho, Chiyoda-ku, Tokyo C.P.O. Box 183 Tokyo	506-3401
Tokyo Suisan Kaisha, Ltd.	13-40, Kohnan 2-chome, Minato-ku, Tokyo	471-5127
Washington Fish Inc.	No. 2, Teiko Bldg., 1-12-2, Shintomi, Chuo-ku, Tokyo	551-3191

Major Importers of Agar (Kanten)

Name of Importers	Address	Telepohone	Remarks
Mitsui-Bussan Co., Ltd.	1-2 Nishi-shinbashi, Minato-ku, Tokyo	505-1111	Joint Venturers in Portugal
East Asiatic Co., Ltd.	Hibiya Kokusai Bldg., 2-2-3 Uchisaiwai-cho Chiyoda-ku, Tokyo	508-9841	Chile, Argentina, etc.
Arai Kiyotaro Shoten	1-8, Onone-cho Naka-ku, Yokohama	045-681-6724	Chile, South Korea, etc.
Taiyo-Shoji Co. Ltd.	Taiyo Bldg., 4-1, Miyuki-cho Fukiai-ku, Kobe	221-8971	South Korea, etc.
T.S. Boeki K. K.	Shimizu Bldg., 1-8, Nihonbushi Hon-cho, Chuo-ku Tokyo	279-6077	
Maruo-Sangyo K. K.	Asakawa Bldg. 1-5-5, Yaesu Chuo-ku, Tokyo	272-2641	
Sumitani Shoten	Boeki Bldg. 123-1, Azuma-cho Ikuta-ku, Kobe	321-8561	
Nikon Kanten Boeki K. K.	Asahi Bldg. 59, Naniwa-cho Ikuta-ku, Kobe	331-1483	

Major Importers[1/] of Processed Eel

Name of Importers	Address	Telephone
C. Itoh & Co. Ltd.	2-4 Nihonbashi Chuo-ku, Tokyo	662-5111
Mitsubishi Yuka Co., Ltd.	Mitsubishi Bldg. 2-5-2, Marunouchi Chiyoda-ku, Tokyo	283-5576
Eisuke Shoji Co. Ltd.	Saito Bldg. 8-5-9, Ginza Chuo-ku, Tokyo	571-4725
Kanematsu-Gosho Ltd.	2-5, Takara-cho Chuo-ku, Tokyo	562-8799
Kawatetsu Shoji	Boeki Centre Bldg. 2-4-1, Hamamatsu-cho Minato-ku, Tokyo	435-3371
Towa Boeki Co. Ltd.	Shirakiya Bldg. 3-4, Kyobashi Chuo-ku, Tokyo	271-7121
Wako Boeki Co.	Dai-ichi Toei Bldg. 4-2 Nihonbashi Muro-machi Chuo-ku, Tokyo	270-6561
Toyo Suisan Co. Ltd.	2-13-40 Konan, Minato-ku, Tokyo	471-5172
Tokyo Unagi Hanbai Co. Ltd.	Tsuruya Kato Bldg. 4-21 Shinbashi Minato-ku, Tokyo	437-2566
Tokai Denpun Co. Ltd.	24-15, Tenma-cho Shizuoka-shi Shizuoka-ken	(0542) 53-1181

Major Importers[1/] of Eels and Eel Elvers

Name of Importers	Address	Tel.
Towa Boeki K. K.	Shirakiya Bldg. 3-4, Kyobashi, Chuo-ku Tokyo	271-7121
C. Itoh & Co., Ltd.	2-4, Nihonbashi, Honcho Chuo-ku, Tokyo	662-5111
Daido Boeki K.K.	5-2-15, Miyuki-cho Fukiai-ku, Kobe	251-8686

1/ Members of Japan Eel Import Association

Wako Boeki	Dai-yon Mori Bldg. 1, Sakurakawa-cho Shiba Nishikubo, Minato-ku Tokyo	591-1527
Kindai Kaihatsu Co., Ltd.	4-13-8, Ginza Chuo-ku, Tokyo	543-3666
Kato Shoten K.K.	Dairoku Mitsui Bldg. 202, 2-8 Nihonbashi Muromachi Chuo-ku, Tokyo	270-3611
Ohtori Bussan Co., Ltd.	349-1, Aza Hirota Yatsu, Tomisato-mura Inbanuma-gun, Chiba-ken	(04769) 3-3855-7
Nozaki Sangyo Co., Ltd.	7-16-19 Ginza Chuo-ku, Tokyo	542-9211
Renyu Co. Ltd.	Kanesaka Bldg. 2-5-4, Shinbashi, Minato-ku, Tokyo	591-5454
Tosho Co. Ltd.	3-6, Mizuochi-cho Shizuoka-shi Shizuoka ken	(0542) 53-1181
Tokyo Office:	1-9-10, Saga-cho Koto-ku, Tokyo	642-3227
Ataka & Co. Ltd.	Ohtemachi Bldg. 1-6-1 Ohtemachi, Chiyoda-ku Tokyo	217-2739
Tokyo Unagi Hanbai	Tsuruya Kato Bldg. 4-21-7 Shinbashi, Minato-ku, Tokyo	437-2566
Hokkaido Gyogyo Kosha K. K.	1-3-9, Higashi Shinbashi, Minato-ku, Tokyo	573-1122
Sanko K. K.	5-1, Isokami-dori Fukiai-ku, Kobe	231-4651
Itoh Shoten	1-9-1, Mibuchi Kisarazu-shi, Chiba-ken	(0438) 22-2062
Union Bussan Co. Ltd.	Dai 10 Yama Bldg. 8-19-18, Ginza Chuo-ku, Tokyo	543-2131
Kanematsu-Gosho Ltd.	2-5, Takara-cho Chuo-ku, Tokyo	562-7971
C. Itoh & Co., Ltd.	4, 2-chome, Honcho, Nihonbashi Chuo-ku, Tokyo	639-5111

Kanematsu-Gosho Ltd.	5, 2-chome, Takara-cho, Chuo-Ku, Tokyo (Central P.O. Box No. 141)	562-7060
Kasho Co., Ltd.	14-9, 2-chome, Nihonbashi Edobashi, Chu-ku, Tokyo (P.O. Box No 150 Nihonbashi Tokyo)	270-5221

Statistical Annex

Table I

Japan - Production of Selected Fishery Products (lobster, shrimp, squid, cuttlefish, eel, agar)

	1970	1971	1972	1973	1974	1975	1976	1977
TOTAL	55 637	51 151	58 276	62 316	78 914	69 337	61 022	54 505
Lobster	1 485	1 334	1 414	1 327	1 289	1 086	1 028	971
Prawn (*Penaeus japonicus*)	1 263	1 983	2 232	2 780	2 653	2 895	2 579	3 564
Other prawns and shrimp	52 889	47 834	54 630	58 209	74 972	65 356	57 415	49 970
TOTAL	518 917	482 518	599 450	486 257	469 967	530 927	490 688	490 443
Squid (*Todarodes pacificus*)	412 240	364 349	464 365	347 566	335 018	378 344	300 963	234 406
Cuttlefish (*Sepia esculenta* sp.)	14 740	15 413	15 090	12 225	17 190	15 517	19 750	20 415
Other squid and cuttlefish	91 937	102 756	119 995	126 496	117 759	137 066	169 975	227 963
TOTAL	231 901	191 656	253 936	356 343	373 573	273 640	351 248	322 564
Skipjack	202 870	171 544	222 826	321 617	346 895	258 736	331 047	309 215
Small tuna (including frigate mackerel)	29 031	20 112	31 110	34 726	26 678	14 904	20 201	13 349
TOTAL	19 456	16 857	15 773	17 354	19 160	22 951	28 291	29 732
Captured eel	2 726	2 624	2 418	2 107	2 083	2 202	2 040	2 102
Cultured eel	16 730	14 233	13 355	15 247	17 077	20 749	26 251	27 630
TOTAL	2 736	2 220	1 964	2 128	2 002	1 972	1 959	2 097
Tennen kanten 1/	988	1 396	1 162	1 182	1 079	1 076	1 015	1 075
Kogyo kanten 2/	1 748	823	801	945	922	896	944	1 022

1/ Natural agar 2/ Industrial agar

Source: Annual Report on Statistics of Fishing and Aquaculture Ministry of Agriculture, Forestry and Fisheries, 1979, Japan

Table II

Sources of Japanese Fresh or Frozen Shrimp Imports[1/]

000 metric tons - product weight
000 million yen

	1970		1975		1976		1977		1978	
	Quality	Value	Quality	Value	Quality	Value	Quality	Value	Quality	Value
TOTAL	57.1	49.3	113.7	137.5	123.3	218.7	124.8	212.7	144.0	209.7
AFRICA	1.8	1.4	4.9	6.1	4.5	8.2	5.0	9.4	4.3	6.4
Madagascar	0.9	0.7	1.9	2.2	2	3	2.1	3.9	1.9	2.6
Nigeria	0.3	0.2	0.9	1.1	1	1.5	1.1	1.7	0.5	0.8
Mozambique	0.0	0.0	1.0	1.1	1	2	1.3	2.6	1.3	2.1
NORTH AMERICA	0.6	0.6	0.1	0.1	0.3	0.8	0.9	0.9	0.7	1.0
U.S.A.	0.6	0.6	0.1	0.1	0.3	0.8	0.5	0.6	0.5	0.5
LATIN AMERICA	11.2	10.3	9.3	13.9	10.9	24.6	10.5	22.3	14.5	24.5
Mexico	7.2	7.2	4.1	7.3	5.2	12.6	4.2	9.5	7.9	14.4
Cuba	2.0	1.4	3.5	3.9	1.7	2.8	1.4	2.2	0.9	1.2
Suriname	-	-	0.2	0.3	1.0	2.4	1.2	2.8	1.0	1.9
Guyana	0.2	0.1	1.0	1.5	0.9	2.1	1.1	2.3	1.2	1.9
Brazil	0.7	0.6	0.4	0.6	0.8	1.6	1.6	3.4	2.6	3.5
ASIA	36.4	32.6	94.3	108.6	100.8	168.7	99.9	160.0	115.0	161.0
India	6.4	5.3	29.9	27.1	26.9	39.8	25.8	34.6	31.6	35.5
Indonesia	3.7	3.2	21.1	27.5	25.5	45.9	25.7	45.2	28.3	42.8
Thailand	6.0	5.0	8.8	11.0	9.8	17.7	7.2	12.6	8.4	12.4
Malaysia	3.0	2.3	4.5	4.7	7.4	11.1	3.4	5.9	2.8	4.3
China	6.2	6.9	9.8	14.0	5.6	12.7	3.7	8.8	9.2	18.7
Republic of Korea	0.4	0.3	2.9	3.4	4.7	3.8	2.6	3.6	2.5	2.8
Hong Kong	3.1	3.3	4.1	6.0	4.6	10.1	6.0	12.5	4.6	8.7
Pakistan	2.3	1.9	3.0	3.2	3.9	7.0	3.9	6.6	3.7	4.9
Taiwan	-	-	3.4	4.2	3.2	4.4	4.4	5.7	5.6	7.3
Philippines	0.4	0.3	1.1	1.5	2.1	3.9	2.4	4.5	2.8	4.7
OCEANIA	3.7	4.1	5.1	8.8	6.8	16.4	8.5	20.1	7.6	16.4
Australia	3.7	4.1	4.7	8.1	6.2	15.1	7.7	18.6	7.5	16.4
Papua New Guinea	-	-	0.2	0.3	0.6	1.3	0.8	1.5	0.1	0
New Zealand	0.0	0.0	0.2	0.4	-	-	-	-	-	-
U.S.S.R.	3.4	0.3	-	-	-	-	-	-	1.9	0.4

1/ Until 1975 the import of fresh and frozen lobster was included

Source: Japan Exports and Imports 1970, 1975, 1976, 1977, 1978, Japan Tariff Association

Statistical Annex (cont'd)

Table III

Household Annual Expenditure for Shrimp, Lobsters and Crabs

Quantity Purchased and Average Price per year

Shrimp, lobsters and crabs (100 g)		
	Exp.	Quantity
1967	1 027	18.04
1968	1 233	20.19
1969	1 532	21.664
1970	2 262	28.613
1971	2 879	32.832
1972	3 321	34.961
1973	3 866	33.391
1974	5 720	44.408
1975	6 460	43.634
1976	6 874	40.364
1977	7 053	36.866

Source: Annual Report of the Family and Expenditure Survey, 1977, Office of the Prime Minister, Japan

Statistical Annex (cont'd)

Table IV

Relationship between Supply and Price Indices 1970-1977 (1975= 100)

	1973	1974	1975	1976	1977
Lobster Q	137	140	100	104	120
V	83	78	100	113	126
Prawn Q	109	97	100	94	98
V	74	88	100	127	134
Shrimp (taisho-ebi) Q	87	220	100	70	50
V	92	79	100	170	166
Other shrimp Q	92	88	100	119	105
V	76	95	100	116	139
Blue fin Q	110	99	100	88	109
V	80	96	100	121	116
Big eye Q	100	85	100	74	58
V	71	81	100	136	157
Horse mackerel Q	85	80	100	89	63
V	84	109	100	145	204
Mackerel Q	85	80	100	89	99
V	92	107	100	137	144
Saury Q	155	62	100	47	75
V	57	73	100	157	213
Squid Q	98	86	100	84	74
V	56	102	100	122	143
Flounder Q	111	103	100	78	105
V	88	108	100	136	187
Fresh fish Q	94	94	100	99	96
Shellfish, overall V	72	90	100	118	137

Source: Based on Annual Report on Statistics of Marketing of Fishery Products, 1979. Ministry of Agriculture, Forestry and Fisheries, Japan.

Statistical Annex (cont'd)

Table V

Import Prices c.i.f. of Shrimp by Origins (U.S.$ per kg)

	1970	1974	1975	1976	1977	1978
Fresh or frozen						
Average	2.4	3.9	4.1	6.0	6.4	7.0
India	2.3	3.0	3.1	5.0	5.0	5.4
Indonesia	2.4	4.1	4.4	6.1	6.6	7.3
Thailand	2.3	4.2	4.2	6.1	6.6	7.1
Mexico	2.8	4.9	6.0	8.2	8.5	8.8
China	3.1	5.1	4.8	7.7	8.9	9.8
Australia	3.1	6.4	5.8	8.2	9.0	10.5
Hong Kong	3.0	4.7	4.9	7.4	7.8	9.1
Pakistan	2.3	3.4	3.6	6.1	6.3	6.4
Malaysia	2.1	3.3	3.5	5.1	6.5	7.4

Source: Compiled based on Japan Exports and Imports 1970-78, Japan Tariff Association

Table VI

Japan - Import of Fresh and Frozen Squid, including Cuttlefish (by country of origin)

	Quantity ('000 tons product weight)					Value (million yen)				
	1970	1975	1976	1977	1978	1970	1975	1976	1977	1978
TOTAL	15 225	58 580	68 533	74 732	118 142	3 948	29 334	39 994	37 786	42 590
AFRICA	3 629	3 974	3 480	2 902	5 231	785	2 161	2 270	1 973	2 286
Senegal	-	1 387	1 991	1 751	1 350	-	981	1 332	1 262	541
Morocco	-	1 277	768	800	3 247	-	725	569	548	1 548
Mauritania	867	631	251	341	486	217	176	114	142	154
Sahara	-	258	-	-	-	-	113	-	-	-
Canary Is.	2 747	204	406	10	21	564	91	226	9	11
NORTH AMERICA	-	1 130	4 239	11 067	29 469	-	187	962	2 623	6 618
U.S.A.	-	970	1 123	2 439	1 909	-	156	775	462	393
Canada	-	160	3 116	7 423	27 156	-	31	187	1 871	6 159
LATIN AMERICA	70	1 655	2 665	1 450	12 714	21	577	1 150	874	2 745
Panama	-	964	1 614	1 313	2 012	-	420	945	843	845
Argentina	4	625	753	27	9 825	1	143	152	9	7
Uruguay	-	58	299	110	881	-	11	53	22	165
ASIA	2 716	37 419	44 018	41 903	49 108	787	20 454	28 076	24 128	22 854
Republic of Korea	958	19 758	21 760	19 935	27 488	196	8 550	11 103	10 409	10 710
Thailand	564	9 262	7 524	8 250	10 121	198	6 152	5 855	5 046	5 805
Taiwan	251	2 078	2 034	1 579	3 858	76	1 914	2 383	1 754	2 725
PDRY	28	1 790	3 207	5 280	2 168	7	819	2 433	3 353	917
Malaysia	98	1 149	1 960	1 445	1 318	39	725	1 381	855	758
Vietnam	-	881	329	592	387	-	719	335	560	291
China	106	627	338	117	236	15	157	125	52	53
EUROPE	8 810	14 402	14 131	16 878	21 274	2 355	5 955	7 536	8 027	8 007
Spain	3 302	8 338	7 691	17 780	13 592	661	3 798	4 947	4 739	5 941
Ireland	-	2 651	2 756	3 035	2 111	-	535	505	674	369
Greece	1 675	1 586	1 847	2 890	1 213	500	710	970	1 288	406
France	3 134	1 161	734	2 439	1 778	691	523	444	1 103	423
Italy	700	667	1 052	234	1 741	504	389	638	169	712
OCEANIA	-	-	-	332	163	-	-	-	103	42
Australia	-	-	-	-	10	-	-	-	-	2
New Zealand	-	-	-	332	153	-	-	-	103	40
U.S.S.R.	-	-	-	200	183	-	-	-	58	38

Source: Japan Exports and Imports, 1970, 1975, 1976, 1977, 1978, Japan Tariff Association
Note: The Middle East is included in Asia

Statistical Annex (cont'd)

Table VII

Production of Processed Squid

Product weight metric tons

	1972	1973	1974	1975	1976	1977
Smoked	299	709	546	615	1 215	1 766
Salted	299	1 147	716	953	1 022	979
Dried (surume)	13 098	10 869	8 725	12 235	8 649	9 429
Salted fermented (shiokara)	11 856	11 188	12 055	13 275	14 795	14 478
Preparations	44 663	53 010	39 333	44 696	47 594	55 606
Canned (seasoned)	5 008	2 991	1 736	5 299	3 968	3 439
Canned (others)	46	558	-	-	25	138

Source: Annual Report on Statistics of Marketing of Fishery Products, Ministry of Agriculture, Forestry and Fisheries, Japan, 1978

Statistical Annex (cont'd)

Table VIII

Household Annual Expenditure for Squid (Fresh and Processed)

Quantity Purchased and Average Price by Year

	Squid (cuttlefish) (100 g)				Dried Squid (Surume) (100 g)		
	Exp.	Quan.	Per caput[1/] Consumption	Price	Exp.	Quan.	Price
1967	1 818	87.46	21.07	20.79	189	2.87	65.87
1968	1 939	86.26	21.19	22.48	200	3.07	65.21
1969	2 010	78.003	19.55	25.77	228	3.211	70.91
1970	2 526	79.218	19.9	31.89	276	2.964	93.15
1971	2 971	64.995	16.4	45.73	275	2.370	116.12
1972	3 472	78.532	19.98	44.21	375	3.044	123.34
1973	3 827	76.890	19.66	49.77	488	3.559	137.04
1974	4 688	63.777	16.35	73.50	553	2.867	193.05
1975	5 836	73.182	18.96	79.75	630	2.924	215.61
1976	6 249	70.769	18.29	88.30	672	2.829	237.60
1977	6 816	66.656	17.27	102.25	612	2.241	273.19

1/ At household levels

Source: Annual Report of the Family and Expenditure Survey, 1977

Office of the Prime Minister, Japan

Statistical Annex (cont'd)

Table IX

Import Unit Values c.i.f

For Squid (including cuttlefish) of Major Origin (U.S.$ per kg)

	1974	1975	1976	1977	1978
Average from all sources	1.40	1.76	1.97	1.90	1.73
Rep. of Korea	0.79	1.45	1.72	1.95	1.88
Thailand	1.93	2.25	2.62	2.28	2.75
Spain	1.27	1.54	2.17	2.27	2.10
Canada	-	0.52	0.20	0.94	1.09
PDRY	1.19	2.30	2.56	2.37	2.03
Ireland	-	0.67	0.62	0.84	0.84
Greece	1.21	1.49	1.77	1.66	1.61
France	1.44	1.47	2.04	1.72	1.14
U.S.A.	0.75	0.54	2.33	0.67	0.99
Senegal	2.17	2.75	2.26	2.65	1.92

Source: Compiled based on Japan Export and Import, 1974 - 1978, Japan Tariff Association

Statistical Annex (cont'd)

Table X

Production of Katsuobushi and similar products (product weight)

tons

	1970	1973	1974	1975	1976	1977
"Fushi" total	98 375	113 668	118 805	120 310	121 002	126 881
Katsuobushi	14 098	17 938	19 505	22 393	24 464	23 755
Katsuonamaribushi	7 679	8 968	10 316	9 831	12 745	11 975
Sodakatsuobushi a/	5 674	6 953	5 558	4 215	3 707	3 329
Sababushi b/	20 781	22 620	26 200	25 670	25 931	34 995
Iwashibushi c/	-	141	590	-	-	-
Others	4 616	3 615	2 807	4 132	4 880	5 449
Kezuribushi d/	45 525	53 430	53 828	54 069	49 275	47 418

Note: Figures may not add due to rounding

a/ Frigate tuna "fushi"

b/ Mackerel "fushi"

c/ Sardine "fushi"

d/ Flake of "fushi" except Katsuobushi

Source: Annual Statistical Report on Marketing of Fish Products. Ministry of Agriculture, Forestry and Fisheries, 1979

Statistical Annex (cont'd)

Table XI

Household annual expenditure, quantity purchased and average price by year

Expenditure: Yen
Quantity: 100 g
Average price: Yen/100 g

Year	Katsuobushi			Kezuribushi		
	Exp.	Quan.	Price	Exp.	Quan.	Price
1967	205	1.730	118.47	295	5.640	52.33
1968	249	2.030	122.30	294	5.290	55.59
1969	298	2.277	130.85	278	4.845	57.31
1970	380	2.719	139.91	265	4.177	63.34
1971	484	3.139	154.07	208	3.061	67.88
1972	601	3.692	162.97	176	2.554	68.96
1973	802	4.586	174.97	137	1.910	71.55
1974	1 011	4.552	222.22	144	1.690	85.37
1975	1 190	4.696	253.34	134	1.500	89.12
1976	1 163	4.000	290.79	174	1.582	110.22
1977	1 164	3.252	367.91	273	2.027	134.84

Source: Annual Report of the Family Income and Expenditure Survey, Office of the Prime Minister, Japan 1978

Table XII

Imports and Exports of Dried Skipjack Tuna (Katsuobushi) and the like
by Country of Origin and Destination

	Quantity (tons)					Value (Million yen)				
	1970	1975	1976	1977	1978	1970	1975	1976	1977	1978
IMPORTS										
Total	620	1 445	2 263	3 096	2 186	263	914	1 886	2 461	1 442
Taiwan	405	449	993	1 504	845	138	309	845	1 225	493
Thailand	-	368	414	484	329	-	215	289	348	234
Papua New Guinea	-	263	301	231	244	-	161	242	222	198
Solomon Is.	-	124	231	110	223	-	82	147	119	185
Others	215	241	324	767	545	125	147	363	547	332
EXPORTS										
Total	531	26	35	36	39	433	54	77	82	98
U.S.A.	24	19	28	25	25	27	37	59	54	59
Others	507	7	7	11	14	406	17	18	28	39

Source: Japan Exports and Imports, 1970, 1975, 1976, 1977, 1978
Japan Tariff Association

Table XIII

Imports of Herring roe by Country of Origin

	Quantity (tons)					Value (million yen)				
	1970	1975	1976	1977	1978	1970	1975	1976	1977	1978
Herring roe, fresh	595	173	196	403	372	828	142	200	453	382
Canada	-	158	185	395	372	-	136	189	444	382
Others	595	15	11	8	0	828	6	11	9	0
Herring roe, cured	595	7 611	11 698	10 275	9 616	828	13 834	28 933	29 265	34 730
Canada	23	4 360	7 661	8 767	7 589	29	7 380	18 511	24 958	28 019
China	-	1 116	1 447	397	700	-	1 726	3 844	1 096	1 869
U.S.A.	190	1 106	1 202	713	670	323	2 071	2 790	1 991	2 410
Korea, Rep. of	47	975	1 360	377	636	76	2 526	3 761	1 196	2 406
Others	335	54	28	21	21	400	131	27	24	26
Roe of herring or cod in airtight container	22	39	22	25	36	7	20	13	16	19
Norway	4	13	6	12	14	1	7	4	9	8
Denmark	18	26	16	9	22	5	13	9	5	11
Others	0	0	-	4	-	1	0	-	2	-

Source: Japan Exports and Imports, 1970, 1975, 1976, 1977, 1978, Japan Tariff Association

Table XIV

Imports of Live Eel by Quantity, Value and Country of Origin

Quantity: tons
Value: million yen

	1973		1974		1975		1976		1977		1978	
	Q	V	Q	V	Q	V	Q	V	Q	V	Q	V
Taiwan	6 750	10 320	6 789	13 397	10 843	19 041	14 130	23 554	15 319	25 499	11 993	23 964
Thailand	7	7	-	-	8	8	32	51	87	132	43	86
China	33	50	17	20	18	19	16	21	12	14	15	20
U.S.A.	9	10	13	17	8	8	6	8	5	6	48	61
Hong Kong	3	4	0	0	19	32	14	20	3	6	2	3
Total	6 934	10 520	7 739	13 466	10 929	19 160	14 207	23 667	15 428	25 661	12 012	24 148

Source: Japan Exports and Imports, Japan Tariff Association, 1973-1978

Table XV

Imports of Elvers by Quantity, Value, Unit Value and Country of Origin

Quantity: tons
Value: million yen
Unit value: yen/kg

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Taiwan									
Quantity	101	271	114	45	161	135	32	-	0
Value	1 741	2 200	1 517	494	895	661	319	-	3
Unit value	17 253	8 128	13 297	10 939	5 545	4 889	10 045	-	21 400
Korea, Rep. of									
Quantity	11	10	13	77	84	53	47	21	35
Value	274	273	522	1 642	855	488	895	429	656
Unit value	25 564	28 141	38 779	21 326	10 130	9 124	18 953	20 443	18 742
France									
Quantity	10	24	71	219	45	16	47	50	46
Value	98	178	550	1 744	290	97	317	298	267
Unit value	9 436	7 542	7 785	7 953	6 010	6 088	6 816	5 935	5 767
China									
Quantity	0	1	1	3	7	15	8	7	10
Value	0.3	38	55	105	176	362	941	1 043	2 165
Unit value	15 000	30 329	37 012	34 146	26 387	24 815	11 521	152 950	209 281
Others									
Quantity	10	12	15	15	6	3	3	9	7
Value	74.7	137	148	155	27	28	73	319	149
TOTAL									
Quantity	132	318	214	359	303	222	137	87	98
Value	2 188	2 826	2 792	4 140	2 243	1 636	2 545	2 089	3 240
Unit value	16 575	8 887	13 047	11 532	7 403	7 369	18 577	24 011	33 061

Source: Japan Exports and Imports, Japan Tariff Association, 1970-78

Table XVI

Imports of Agar and Algae for Agar by Country of Origin

	Quantity (tons product weight)					Value (million yen)				
	1970	1975	1976	1977	1978	1970	1975	1976	1977	1978
Kanten in the form of shreds	178	181	281	287	210	220	480	550	611	408
Korea, Rep. of	178	180	281	287	210	220	476	550	611	408
Others	-	1	0	0	0	-	4	0	0	0
Kanten n.c.s.	240	116	418	287	426	322	381	994	687	772
Portugal	142	53	175	86	73	184	187	435	225	144
Argentina	60	28	56	42	120	83	91	133	168	200
Korea, Rep. of	-	24	83	53	48	-	58	180	122	87
Others	38	11	104	106	185	55	45	246	172	341
Algae for agar (Gelidiceae)	927	493	600	518	550	114	169	207	169	128
Chile	476	258	307	270	175	56	105	109	85	46
Egypt	50	110	140	120	20	8	35	44	34	4
Madagascar	107	80	-	-	40	10	16	-	-	9
Mexico	8	-	55	26	10	1	-	23	12	3
Others	286	45	98	102	305	39	13	31	38	66
Other Algae for agar	6 444	5 269	7 002	5 757	7 931	658	1 580	1 945	1 428	1 631
Chile	3 295	3 253	4 546	4 208	4 696	314	973	1 161	1 015	898
Brazil	-	680	265	332	144	-	129	45	53	22
China (Taiwan)	-	538	361	390	294	-	267	0	177	114
Argentina	2 216	471	1 040	378	1 147	251	147	323	115	263
Philippines	64	173	653	354	1 469	3	43	0	57	304
Others	869	154	137	95	181	90	21	416	11	30

Source: Japan Exports and Imports, 1970, 1975, 1976, 1977, 1978, Japan Tariff Association